

Critical Thinking for Young Minds

Michael Gannotti

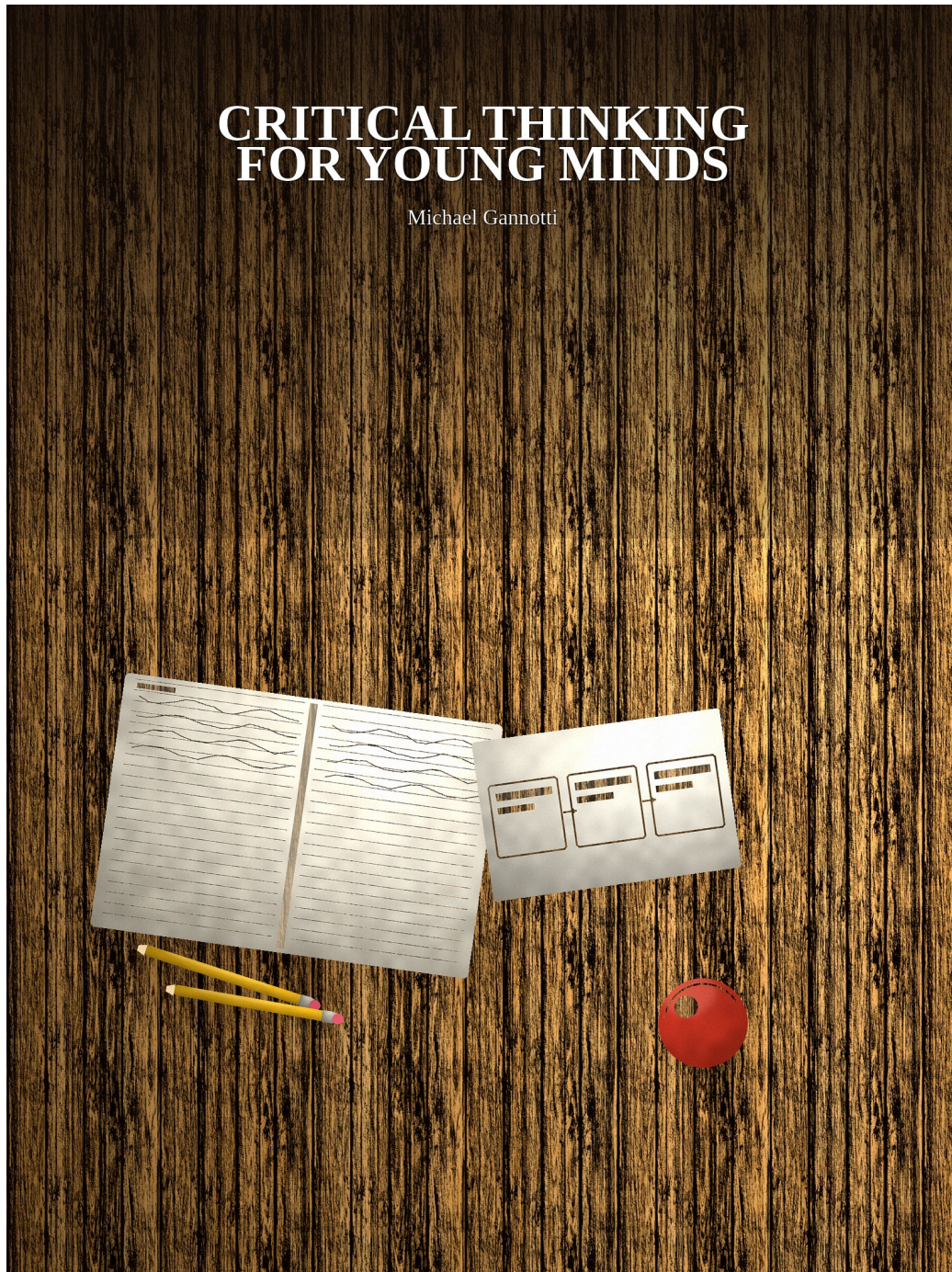


Figure 1: Cover

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This illustrated edition is the teaching-manual of 1 September 2026. Endnotes run in one series. Chapter-opening images are original still-lives, not portraits of persons or children. Documents still constrain the facts.

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Welcome

This book exists because the thinking hour at your table is the whole program. There is no philosophy department down the hall and no specialist waiting after lunch. There is you, a student of eleven to fifteen, and today’s move — something to look at, a question worth waiting for, a reason to hear, one other thing to check. That is enough, if you know what to do with the hour.

I wrote this for a capable, busy, willing parent of an eleven- to fifteen-year-old. You may be fitting a thinking sit between a job, a younger sibling, and a grocery run. You may love a good argument, or you may remember philosophy as a fog of names. Many adults feel rusty when they sit down to teach thinking. That feeling is common. It is not a verdict. This book will make you fluent enough in today’s move to hear an own-side “because” offered as a finished argument, a fluent recap offered as a check — and to ask a good question, without turning dinner into a courtroom.

You do not need to be a philosopher. You do need to hear “because we wanted it more” as a why-story, not a look at the box score. A path through ordinary challenges — a recap versus a box score, two forecasts, a spec sheet, a rainfall graph, who should be captain — is possible at a kitchen table. It is a small set of moves, practiced on something the student already knows, with you in the chair.

About 3.4 percent of U.S. students ages 5–17 were homeschooled in 2022–23 — roughly 1.765 million children.¹ This book’s pond sits in two grade-equivalent

¹Ellena Sempeles and Jiashan Cui, *Parent and Family Involvement in Education: 2023*, NCES 2024-113 (Washington, DC: National Center for Education Statistics, September 2024), Table A-6: 3.4 percent homeschooled, approximately 1,765,000 students, ages 5–17 with a K–12 grade equivalent, 2022–23; grade-equivalent cells 6th–8th 3.0 percent and 9th–12th 3.1 percent. <https://nces.ed.gov/pubs2024/2024113.pdf>. Access date for URLs in these notes: 1 September 2026. Latest federal count this book uses; not a 2026 national total. A neighboring 5.2 percent

cells: about 3.0 percent in grades 6–8, and about 3.1 percent in grades 9–12. Context, not a ranking. Many readers will not be in that pond. They will be after-school, weekend, or kitchen-table parents of enrolled eleven- to fifteen-year-olds. The moves still fit. Homeschooling is legal in all fifty states and the District of Columbia. The paperwork is not one load: Texas asks almost nothing of the state agency; New York asks for a written plan and regular reports.² There is no national homeschool diploma and no national critical-thinking credit.³ None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course.⁴ The last federal tables that listed subjects taught at home had no row for critical thinking, philosophy, or logic. Thinking, if it happened, happened inside English, science, or conversation.⁵ The hour in front of you is the work.

received instruction at home (homeschooled or full-time virtual) and is a different bucket.

²Texas Education Agency, “Home Schooling,” <https://tea.texas.gov/families-and-students/finding-school-your-child/home-schooling>. New York State Education Department, “Home Instruction Questions and Answers,” <https://www.nysed.gov/nonpublic-schools/home-instruction-questions-and-answers>. Homeschooling is legal in all fifty states and D.C.; these two pages illustrate a light-process and a heavier-process pattern, not a national template. This book is not legal advice.

³Texas Education Agency, “Home Schooling”: “The State of Texas does not award a diploma to students that are home schooled.” New York State Education Department, “Home Instruction Questions and Answers”: a high school diploma “may only be awarded to a student enrolled in a registered secondary school.” North Carolina Division of Non-Public Education, “Home School Records Retention & Diplomas FAQs,” <https://www.doa.nc.gov/divisions/non-public-education/home-schools/faqs/records-retention-diplomas>: the State does not issue a diploma or a transcript; the home-school chief administrator does.

⁴Texas Education Agency, “Alternative Schooling,” restating *Leeper*: bona fide instruction using a written curriculum of reading, spelling, grammar, math, and a course in good citizenship. North Carolina Division of Non-Public Education, “Home School Requirements and Recommendations”: annual nationally standardized test in English grammar, reading, spelling, and mathematics. Pennsylvania 24 P.S. § 13-1327.1: elementary and secondary required lists omit critical thinking; secondary graduation units are English, mathematics, science, social studies, and arts and humanities. Virginia Department of Education, “Home Instruction”: the parent writes a list of subjects; evidence of progress is a composite score, SAT/ACT/PSAT, or an evaluation letter. New York 8 NYCRR 100.10: grades 7–8 and 9–12 required courses omit critical thinking; grades 7–8 include library skills as a statutory neighbor, still not a critical-thinking title. None of these five opened maps names a critical-thinking course. The parent reads their own statute.

⁵Jiashan Cui and Rachel Hanson, *Homeschooling in the United States: Results from the 2012 and 2016 Parent and Family Involvement Survey*, NCES 2020-001 (Washington, DC: National Center for Education Statistics, 2019), Tables 8 and 9. The published subject lists include arithmetic, scientific inquiry or experiments, earth sciences, biology, chemistry or physics, computer science, reading, spelling, English or literature, art, music, social science, history, geography, foreign language, physical education, and health. There is no row labelled critical thinking, philoso-

What a good thinking hour looks like

You sit down already knowing today's move. An object is on the table — a recap, a rainfall graph, two library books, a box score, a window. The student looks. Then they talk. You ask one good question — not “what is the vocabulary word?” but “how do you know?” Then you wait. Three seconds feels long. It is the work. If the reason is own-side, you hear it. Then you look at one other thing. The hour ends with one short task they do alone: a spoken sentence, a dated notebook line, a short written reason plus the check. You stop talking sooner than feels polite. The student talks and looks. You hold the key. *The Thinking Hour* will teach this in full. Later chapters will not reinvent it.

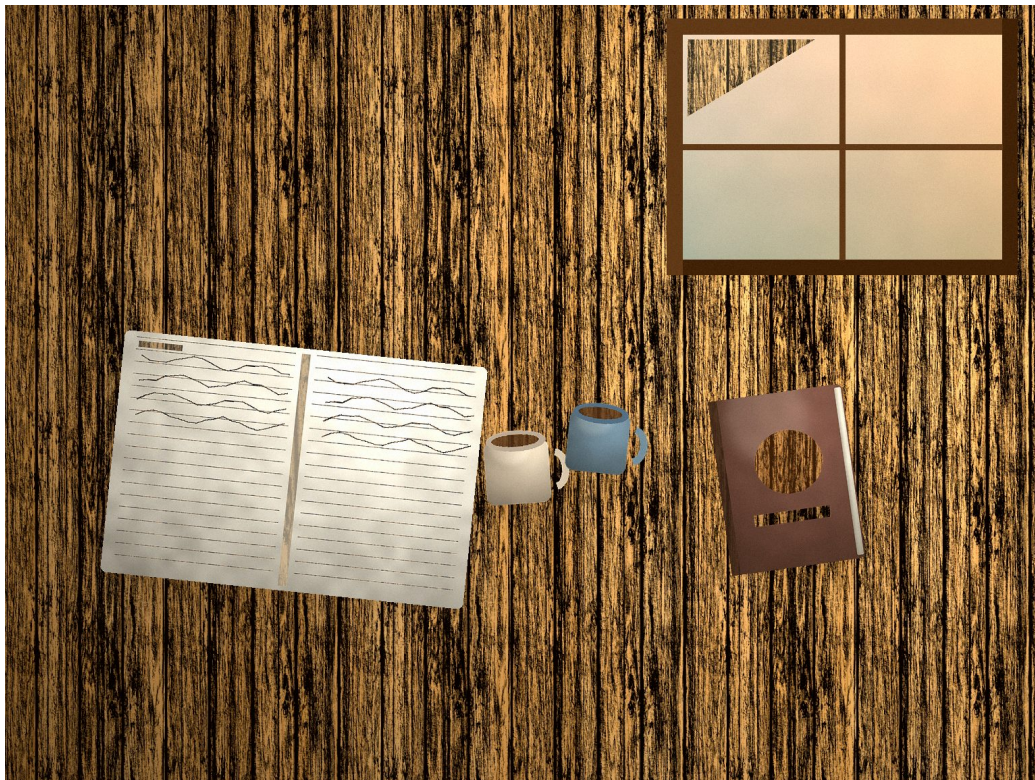


Figure 2: A kitchen-table thinking hour

phy, logic, or informal reasoning. The 2023 First Look did not republish the subject-taught tables. <https://nces.ed.gov/pubs2020/2020001.pdf>.

Young adolescents already think, in a domain they know. A student who offers a fluent own-side “because” about a sport she plays is thinking. She has not finished the dual job. Seventh- and eighth-graders produce argumentative discourse. They are more own-side, and less strategic about the other person’s case, than young adults.⁶ Critical thinking is not a bicycle they now possess because they can argue with a sibling.⁷ We practice the moves on the table in front of us. We do not wait for a readiness gate.

Critical thinking, in the sentence this book keeps, is reasonable reflective thinking focused on deciding what to believe or do.⁸ A student deciding whether a recap’s “dominated” is true and a student deciding who should be captain are both inside that sentence. “Doing justice to challenges” is the increment at this age: the other side is now a person in the room. “Critical” here does not mean find the fault in people.

If you used *Critical Thinking Skills for Little Thinkers* with a five-to-ten-year-old,

⁶Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–53. Thirty-three seventh- and eighth-graders produced argumentative discourse; they were more preoccupied with producing the dialogue, and less strategic about the other person’s case, than thirty-one community-college young adults from the same inner-city population. The study topic is not an exercise in this book. Deanna Kuhn and Wadiya Udell, “Coordinating Own and Other Perspectives in Argument,” *Thinking & Reasoning* 13, no. 2 (2007): 90–104: young adolescents can address an opposing position when explicitly asked; they often will not if you do not ask.

⁷Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* 31, no. 2 (Summer 2007): people who have sought to teach critical thinking “have assumed that it is a skill, like riding a bicycle, and that, like other skills, once you learn it, you can apply it in any situation. Research from cognitive science shows that thinking is not that sort of skill.” Same essay: critical thinking “is a type of thought that even 3-year-olds can engage in—and even trained scientists can fail in.” https://www.aft.org/sites/default/files/media/2014/Crit_Thinking.pdf. Daniel T. Willingham, “How to Teach Critical Thinking” (NSW Department of Education occasional paper, 2019): programs meant to teach general critical thinking skills have had limited success; “We are not even sure the general skills exist, but we are quite sure there is no proven way to teach them directly.” http://www.danielwillingham.com/uploads/5/0/0/7/5007325/willingham_2019_nsw_critical_thinking.pdf.

⁸Robert H. Ennis, “What is critical thinking?,” last revised 26 November 2010, <https://criticalthinking.net/what-is-critical-thinking/>: “Critical thinking is reasonable reflective thinking focused on deciding what to believe or do.” Same sentence in Robert H. Ennis, *The Nature of Critical Thinking: Outlines of General Critical Thinking Dispositions and Abilities* (2013; last revised September 2015), <https://criticalthinking.net/wp-content/uploads/2024/04/The-Nature-of-Critical-Thinking.pdf>. Ennis: although “critical” is sometimes used in a negative sense, the concept presented here is not negative. “Doing justice to challenges” is named in the brief conception. The long outline “does not specify grade level.”

one pointer, then this age. The five moves still work: wait; what do you mean; how do you know; what else could be true; how could we check. The objects there were a swing, a cereal box, a park sign. This book steps the object to a page, a table, and a graph, and adds two-source, graph, counterexample, and steelman. It is not a reprint of that lesson bank.

What you will actually get

Each teaching chapter does eight jobs, always in the same order.

You will learn why this week's idea is worth the struggle, and understand it yourself, with the wrong reasons you should be able to hear. You will get a session you can run this week: exact wording, named try-its in the home and outside it, and a talk box. Your student will get a short section of their own. If it isn't clicking, three diagnostics and a next move, with no shame in the room. Tools, including AI, stay optional and adult-side. "Done enough" lets you place by skill rather than by birthday.

The eight teaching chapters follow the work, not twelve thin grade labels: what we mean; moves that scale; something to think about; two sources; graphs; inside the home; outside the home; approaching disagreement. Records and resources come last.

Today the student can look at a recap and a box score — or a forecast and the sky — say how they know, and change the sentence if the look goes the other way.

What this book will not do

This book will not hand you 180 days of worksheets. Coverage is a map. Depth is the hour.

It will not treat a branded philosophy hour as a miracle. Conversation is worth ten minutes as conversation. A named school program is not a proven engine of generic critical thinking, and it was never measured that way at a kitchen table. Later, a short resources chapter names common programs by fit — parent load, style, how they place a student — so you can choose. The transcript still says English or Science.

It will not franchise a thinking wheel, and it will not prepare an eleven-year-old for a college thinking inventory. Those sittings belong to older students. They are not the kitchen hour.

It will not promise a score. There is no guaranteed percentile, no thinking diploma, and no certificate of thinking. The promise is a path: the moves, on something the student actually knows, until they can do the next one unaided.

It is not a sequel. *Critical Thinking for Life* is a different book, for a different age. One pointer, if you need it later: Chapter 6 of that book is “Leave the page,” and Chapter 8 is “When a machine finishes.” Then we teach at eleven to fifteen. *Autonomous AI and Education*, *Science for Homeschooling*, and *Computer Science for All Ages* are other books. This one is the thinking hour at your table.

It is not a news-literacy course for middle school, and it is not a culture-war pamphlet. This book teaches *how to approach* disagreement. It does not rehearse live fights as content. We practice leaving a recap, a spec sheet, and a storm page. Politics, religion, identity fights, war, and medical culture-war stay off this table. Method yes. Culture-war content no.

And this is not a book that lectures your student about you, or you about your character. The student is a person, not a percentile. When this book speaks to them, it speaks with respect.

The promise

If you only remember one sentence, remember this: a path through ordinary challenges is the promise. A diploma is not.

The work is to take this student through thinking they can actually use — a recap versus a box score, two forecasts, a spec sheet, a rainfall graph, who should be captain — without skipping the look because they are “a good talker,” and without parking them in a workbook because a catalog printed a grade on the cover. You will sometimes slow down. You will sometimes skip ahead. Both are teaching. Birthday is not placement.

Three things have to hold. You understand today’s move well enough to hear an own-side “because” offered as a finished argument, and a fluent recap offered as a check. The student talks and looks at a second source before the tool. Any helper — including an AI tool — stays on your side of the table: a supplement you host

and constrain, not a thinking partner, not a secret friend, and not a substitute for the student's sentence or the look at one other thing.

You can do this. You do not have to know next year's move today. You have to know this week's move well enough to sit still while they struggle, then ask one good question. Start here. Read *How to Use This Book This Week*, then the five things, then *The Thinking Hour*. Open the chapter that matches the skill in front of you. You will know more after one chapter than you know this morning. Your student will have something to try today. We can do this.

How to Use This Book This Week

Start at the skill in front of you, not on page one because a catalog, a birthday, or a well-meant relative said so.

This book is a handbook you open to this week's move, not a novel you read cover to cover. The teaching chapters run: what we mean; moves that scale; something to think about; two sources; graphs; inside the home; outside the home; approaching disagreement. Records and resources come last. Age bands inside each teaching chapter are 11–13 and 14–15. They tell you the grain of the same moves. They do not tell you where *this* student sits.

This book does not replace the program already on the shelf. If a reading curriculum, a science path, a novel, a library card, or a kitchen you already use is working, keep it. Use this book to hear an own-side “because” offered as a finished argument, to run the hour, and to name the work a stranger can read. Combine honestly. The title is still English or Science.

Two ages at one table

You may be teaching an eleven-to-thirteen-year-old and a fourteen-to-fifteen-year-old in the same sit. The session shape in *The Thinking Hour* still holds; the object on the table and the grain of the question change.

The younger student talks first. A spoken sentence, or one written line that names the claim and the check, is enough. Steelman is new and short — one sentence. The older student can hold a little more: a short written reason plus the check, sometimes a two-sentence steelman, sometimes a closed-window line after any tool. They are not two faculties. They are two grains of the same moves.

Pick the chapter by skill, not by birthday

Open the chapter you think is right. Skip to **What “done enough” looks like** at the end of the *previous* chapter, or to **If it isn’t clicking** in the one you opened. If the student can already do those checks unaided, you are too early. If the checks from two chapters back are still failing, drop back.

If they still live in own-side exposition and need the prompt “what would someone who disagrees say?”, they are still in the 11–13 band of the moves chapter, whatever their age.⁹ If they cannot yet hold a two-sentence steelman and a closed-window line after a tool, they are still in a prompted-dual-focus stage, whatever the birthday. A fourteen-year-old who still treats a fluent recap as a check is not “behind in philosophy.” They are still learning to leave the sentence and look at a second source.

If they can wait, ask what a word means, name a reason, open a second source, and read a graph axis, and they are still in a “grade 7 critical thinking workbook” only because the cover says so, skip ahead. Instruction for a twelve-year-old need not be “seventh grade”; it should match what the student actually needs and already knows.¹⁰ A publisher’s grade label is a scope, not a legal grade.

How you use the parent half

Most of each teaching chapter is for you. Read it *before* the lesson, not over the student’s shoulder.

Why this matters tells you what this idea unlocks. **For the parent: understand**

⁹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* 31, no. 2 (Summer 2007): even 3-year-olds can think in a known domain; thinking is not a bicycle skill. Access date for URLs in these notes: 1 September 2026. Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1, no. 1 (2000): 113–29: increasing cognitive control over theory and evidence “may not develop fully even by adulthood.” Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–53: seventh- and eighth-graders produce argumentative discourse and are more own-side than young adults. Used here for what students can already do, not to turn this into a science book.

¹⁰New York State Education Department, “Home Instruction Questions and Answers,” <https://www.nysed.gov/nonpublic-schools/home-instruction-questions-and-answers>: instruction should be geared to the level appropriate to the student’s needs and previous level of achievement; instruction for a twelve-year-old need not be “seventh grade.”

it yourself gives one everyday picture, one precise picture, and three to five wrong reasons you should be able to hear.

How to teach it this week assumes the session shape from *The Thinking Hour*. It will not rebuild the hour. It will give you this week's named try-its — at least one in the home and one outside it — the wording for *this* move, age-band moves for 11–13 and 14–15, and a talk box: an exact opening question, three to five follow-ups, how to wait, and what a stuck silence usually means.

Practice that actually builds learning names the try-its with time, materials, safety, the fun, and the skill. The kitchen, the walk, the store, the library, and team practice *are* the practice. **Tools, including AI** is optional, short, and for the adult. The rules live once in *The Thinking Hour*, with 11–12 and 13–15 said separately. **What “done enough” looks like** is how you leave: unaided work, not a perfect Tuesday.

You do not have to read the whole chapter tonight. You do have to read the parent half of *this week's* move before you sit down with the student.

The five-minute parent warm-up

Five minutes. Student not yet in the chair. Phone face down.

1. Read today's move until you can say it in one sentence.
2. Look at one object yourself. Ask, out loud, what would count as a check. Stay off any tool until you have looked.
3. Glance at the “wrong reasons you should be able to hear.” Name the one you would have given at fourteen.
4. Write one sentence you will actually say. Not a speech. Example: “How do you know?” Or: “What do you mean, *dominated*?” Or: “What's a second place we could look?”
5. Close the book to the student page. You are ready.

If you are learning the move *while* they are stuck, you will talk too much. Prepare first. Then sit still.

How the student uses “For the student”

Every teaching chapter includes a short section written to the student, not about them. One or two pages. Warmer. Direct. What the idea is, a tiny worked example, two tries, an “explain it back” prompt, and one challenge. Hand it over after your short model, not instead of it. You stay in the room.

The student page is not something to send off with an unsupervised chatbot. The attempt is still theirs. You still hold the key. At eleven to fifteen they can read a recap, a spec sheet, a graph axis, and a short article.

In the home and outside it

Every teaching chapter names try-its at the table and try-its on a walk, at a store, in a library, at team practice, or at a museum as looking. The talk box travels. The live fight does not. If a real family disagreement is too hot today, pick the recap, the storm pages, or the spec sheet.

The five moves from ages 5–10 still work. This book does not reprint that lesson bank. Use this book’s added moves — two-source, graph, counterexample, steelman — when the claim can bear them.

When to skip ahead

Skip ahead when this chapter’s “done enough” checklist is already true *unaided*. Slow down when the same own-side “because” repeats after a clear look at a second source. **If it isn’t clicking** will give you three likely causes and a next move. Hearing a wrong reason, then asking a better question, then naming a better reason if needed, is teaching.

A stranger-readable record is a dated notebook and a short written reason plus the check. The title a stranger can read is still English, Mathematics, Science, or Social Studies — not Critical Thinking I.

For this week: pick the chapter by skill. Do the five-minute warm-up. Run the hour as *The Thinking Hour* describes it. Stop talking sooner than you want to.

If You Only Remember Five Things

Keep this page. The chapters will add wording, objects, and this week's questions. They will not replace these.

1. They already think in a domain they know. Critical thinking is deciding what to believe or do, with reasons, on something the student actually knows — a recap, a forecast, a spec sheet, a rainfall graph, who should be captain — and doing justice to challenges.¹¹ It is not emptiness waiting for a kit. A student who offers a fluent own-side “because” about a sport she plays is thinking. She has not finished the dual job. Start now, with ordinary adolescent life. Give them something they already somewhat know. You do not wait for a readiness gate.

2. Moves that scale, not a gym. Wait. What do you mean? How do you know? What else could be true? How could we check? Those five still work. This book adds four: two-source; graph; counterexample; steelman.¹² Thinking is not a bi-

¹¹Robert H. Ennis, “What is critical thinking?,” last revised 26 November 2010, <https://criticalthinking.net/what-is-critical-thinking/>: “Critical thinking is reasonable reflective thinking focused on deciding what to believe or do.” Access date for URLs in these notes: 1 September 2026. Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* 31, no. 2 (Summer 2007): even 3-year-olds can think in a known domain. Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–53: seventh- and eighth-graders produce argumentative discourse and are more own-side than young adults.

¹²Willingham, “Critical Thinking”: people have assumed critical thinking “is a skill, like riding a bicycle,” and that once learned it applies in any situation; “Research from cognitive science shows that thinking is not that sort of skill.” Daniel T. Willingham, “How to Teach Critical Thinking” (NSW Department of Education occasional paper, 2019): programs meant to teach general critical thinking skills have had limited success; “We are not even sure the general skills exist, but we are quite sure there is no proven way to teach them directly.” The five moves scale from *Critical Thinking Skills for Little Thinkers*; this book adds two-source, graph, counterexample, and steelman.

cycle they now possess because they can argue with a sibling. Name the move. Practice it next Tuesday on a similar case. One good question beats five. A skills poster without a thing on the table will not implement.

3. The student talks before the tool. You ask one good question and wait. Three seconds is a convention, not a sacrament.¹³ The silence is the work. After they stop, wait again. Struggle before rescue: ask, wait, hint, then model. You do not finish the reason. You do not grab the answer. A helper, including an AI tool, stays on your side of the table. It does not sit in the chair during the attempt.

4. A fluent recap is not a check. A smooth “because we wanted it more,” “because the recap said dominated,” or “because the graph looks huge” can be a starting point. It is not the look.¹⁴ Leave this sentence and look at one other thing: the box score, the other forecast, the spec sheet, the axis and the numbers, last week’s actual starting five. If the look goes the other way, they may change their mind. That is the work. It is not losing.

5. Ordinary stakes. Ages 11–12: no live open chat. Practice on recaps, forecasts, spec sheets, rainfall graphs, who should be captain, and a teammate’s “we always start with X.” This book teaches *how to approach* disagreement. It does not rehearse live fights as content. If a real family disagreement is too hot today, pick the recap or the spec sheet. For tools: at eleven and twelve, scripts and parent–child talk, not live open chat. At thirteen to fifteen, you still hold the account; an unsupervised chatbot is still not the only partner.¹⁵ A path through ordinary chal-

¹³Robert J. Stahl, “Using ‘Think-Time’ and ‘Wait-Time’ Skillfully in the Classroom,” ERIC Digest ED370885 (1994), <https://files.eric.ed.gov/fulltext/ED370885.pdf>; think-time; about three seconds as a convention, not a sacrament; written for classroom teachers. Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables,” NARST paper, ERIC ED061103 (1972), <https://files.eric.ed.gov/fulltext/ED061103.pdf>, is elementary science class, not a homeschool trial. This book uses the pause so already-present reasoning can be heard.

¹⁴Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): 1–8; young children have difficulty differentiating an explanation of why a claim makes sense from evidence that the claim is true; substantial variation remains among adults. Sam Wineburg and Sarah McGrew, “Lateral Reading and the Nature of Expertise,” *Teachers College Record* 121 (2019): fact checkers leave an unfamiliar page; students and historians often stayed. At eleven to fifteen the same *direction of attention* is leave this recap, this spec sheet, this storm page, and look at one other thing. Joel Breakstone et al., “Students’ Civic Online Reasoning: A National Portrait,” *Educational Researcher* 50, no. 8 (2021): 505–15, is why the habit is taught (high-school sample); this book does not assign those items.

¹⁵Children’s Online Privacy Protection Act, 15 U.S.C. §§ 6501 *et seq.*; 16 C.F.R. Part 312. Federal Register 90 FR 16918 (22 April 2025); amended Rule effective 23 June 2025; general com-

lenges is the promise. A diploma is not. Birthday is not placement. There is no window that closes at fifteen.

The student talks and looks before the tool. You hold the key. If this week needs a compass, this is it. Five things. Then sit down and teach.

pliance date 22 April 2026. Bright line: children under 13. The full allow-and-ban list lives in *The Thinking Hour*. Texas Education Agency, “Home Schooling,” and New York State Education Department, “Home Instruction Questions and Answers”: there is no national homeschool diploma.

The Thinking Hour

The hour has a shape. Learn it once. Later chapters will give you today's move, today's try-it, and today's questions. They will not rebuild this hour. When a chapter says "run the session," it means this.

You do not need a school bell. You need a warm-up, a short model, a real attempt, one good question then wait, a look at a second source, and an unaided exit. Eleven-to-thirteen may finish in ten or fifteen minutes; fourteen-to-fifteen may need twenty. The shape does not change. The object on the table does.

Sit down having already done the five-minute parent warm-up. You know today's move well enough to hear "because we wanted it more" and a fluent recap offered as a check. Ten minutes of a named move, a few times a week, is the right ambition. School enquiry was about weekly and still did not turn into a proven engine of generic thinking at scale.¹⁶ The honest pitch is *often enough that the question is familiar*.

¹⁶Education Endowment Foundation, "Philosophy for Children – second trial," completed November 2021, independent evaluator NFER, <https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/philosophy-for-children-effectiveness-trial>: 198 English primary schools, 5/5 padlock security; FSM-eligible pupils made, on average, no additional progress on Key Stage 2 reading (0 months); no evidence of impact on reading or maths for the whole cohort. English Year 6 is about age 10–11, the floor of this book's band, not a U.S. eighth-grade trial. Stephen Gorard, Nadia Siddiqui, and Beng Huat See, *Philosophy for Children: Evaluation Report and Executive Summary* (Education Endowment Foundation, 2015), ERIC ED581147: 48 schools, efficacy trial, reading about +2 months, maths about +2 months — the smaller trial that did not replicate at effectiveness scale. Dialogue may still be worth ten minutes as dialogue. Access date for URLs in these notes: 1 September 2026.

1. Warm-up

Two to four minutes. An object, a recap, a graph, or last week's claim they already know. Say: "We're going to start with something you already know." Keep this short. A maxim about "seeing both sides" is a noise until it attaches to something they already know.¹⁷

2. Short model

Three to six minutes. One new move, visible. Then you stop. Say: "I'm going to show this one short. Then you'll try." On the second pass, leave a hole: "Your turn to tell me how we could check." When the idea is new, show one incorrect example — a why-story offered as evidence, a fluent recap with no box score, a steelman that is actually a straw. If you are still talking at minute eight, close the model.

3. Student attempt

This is the center of the hour. Five to ten minutes. The first talk and the first look are theirs. Hand them "For the student" or the first try-it. Then you talk less than you want to.

Say: "This one is yours. I'll be quiet." If they stall: ask, wait, hint, then model. Not the reverse. Ask: "How do you know?" Wait. Count a slow three. Hint, one hint: "You already know we can look at the box score." If they are still stuck after a real try: "I'm going to show you this one step. Then you take it from here." Keep your hands off their sentence.

¹⁷Daniel T. Willingham, "Critical Thinking: Why Is It So Hard to Teach?," *American Educator* 31, no. 2 (Summer 2007): you can teach maxims about how students ought to think, "but without background knowledge and practice, they probably will not be able to implement the advice they memorize." Session shape in this chapter is pedagogical design for the kitchen table, not a national thinking-minutes study (none was found).

4. One good question, then wait

An authentic question is one for which you have not already written the answer. “What is the vocabulary word?” is recitation. Say: “How do you know we dominated?” Or: “What do you mean, *always*?” Or: “What’s a second place we could look?”

Then wait. A slow three after you ask. A slow three again after they stop. Robert Stahl called that silence *think-time*; that label is classroom-origin, not a home-school trial. About three seconds is a convention, not a sacrament.¹⁸ Mary Budd Rowe found the same pause in elementary science class. That was science class. This book uses the pause so already-present reasoning can be heard.¹⁹ If they are mid-reason, do not cut them off. If the silence is hard, look at the box score, the graph, or the window, not at the student. At eleven to fifteen the shrug often looks like refusal; do not rescue it. One question. Then stop.

5. Hear an own-side “because”; look at a second source

A student says “because we wanted it more.” That is a why-story. Hear it. A better question: “That’s why you hope so. What would show it?” Then look: the box score, the other forecast, the spec sheet, the axis and the numbers.

A fluent sentence is not a check.²⁰ Leave this sentence and look at one other thing. Hearing a wrong reason, then asking a better question, then naming a better reason

¹⁸Robert J. Stahl, “Using ‘Think-Time’ and ‘Wait-Time’ Skillfully in the Classroom,” ERIC Digest ED370885 (1994), <https://files.eric.ed.gov/fulltext/ED370885.pdf>: eight categories of classroom silence; about three seconds as a convention. Classroom-origin. Not a finding that wait-time teaches critical thinking.

¹⁹Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables: Their Influence on Language, Logic, and Fate Control,” NARST paper, ERIC ED061103 (1972), <https://files.eric.ed.gov/fulltext/ED061103.pdf>: elementary science classes; teachers typically waited about one second after a question and 0.9 seconds after a student answer; extending both to three to five seconds changed discourse. Rowe is science class. This book does not treat Rowe 1972 as a homeschool randomized trial.

²⁰Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): 1–8. Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–53. Sam Wineburg and Sarah McGrew, “Lateral Reading and the Nature of Expertise,” *Teachers College Record* 121 (2019): professional fact checkers leave an unfamiliar page. At eleven to fifteen the same direction of attention scales to a recap, a spec sheet,

if needed, is teaching. Correct the reason. Do not crush the talk. If the look goes the other way, they may change their mind. That is the work. It is not losing.

6. Unaided exit

Two to four minutes. One short task. Book closed. No hints. No chatbot. Say: “One sentence. I won’t help. That’s the point.” Ages 11–13: a spoken sentence, or one written line that names the claim and the check. Ages 14–15: a short written reason plus the check, sometimes a two-sentence steelman, sometimes a closed-window line after any tool. Fade until the check does not need you. If you fill the silence, you took the problem back.

The talk-box shape, once

Later chapters will fill this week’s opening question. They will not reprint this shape.

Opening question. Authentic. About what they mean, how they know, what a second source would show, what a graph actually shows, or the strongest fair version of the other side. Not “did you have fun” and not “what is the vocabulary word.” Use one: What do you think? What do you mean? How do you know? What else could be true? How could we check? What’s a second place we could look? What does this graph actually show? What would count against that? What’s the strongest version of what they mean?

Three to five follow-ups. Pick; you do not need all five every Tuesday. Meaning: What do you mean, *dominated*? Reason: How do you know? Alternative or counterexample: Always? Can we think of a time it wasn’t? Check or second source: What’s a second place we could look? Mind-change or steelman: You may change your mind. Say theirs so they would nod.

How to wait. As in section 4: a slow three after you ask; a slow three after they stop; look at the object if the silence is hard; do not rescue the shrug.

a storm page, and a teammate’s “always” — not a civic-web course. Joel Breakstone et al., “Students’ Civic Online Reasoning: A National Portrait,” *Educational Researcher* 50, no. 8 (2021): 505–15, is why the habit starts small (high-school sample); this book does not assign those items.

What a stuck silence usually means. The question was vague; wait-time after the question was zero; they are searching for a word; they are guessing what you want; the question was recitation in disguise; they offered a why-story where a look was asked for; they think “critical” means finding fault; they think steelman means giving up. Debug, once: shrug → a smaller question and wait, do not rescue. Guesses what you want → “what do you think?” Doubles down → steelman first, then a look. Talks forever with no reason → “what are we going by?” Session becomes a fight → stop, pick a smaller claim. Two-source becomes a rant → two labels, two books. Graph becomes a sermon → title, axes, units. Pose, wait, and point back at the object. You do not stack five questions, perform Socrates, or switch to a live controversy.

When two people do not agree, the same box holds. You do not have to win. You have to listen, then ask, then check.

1. Listen. Let them finish.
2. Ask what they mean. “What do you mean, *dominated*?” Meaning first.
3. Ask for a reason. “How do you know?” A feeling can be named. It is not yet a check.
4. Two sources. Leave this recap, this review, this graph, this “the article said,” and look at one other thing: the box score; two storm pages; the spec sheet; two forecasts then the sky; the axis and the numbers; last week’s starting five.
5. Wait. A fast answer is not better because it was first.
6. You may change your mind. That is the work. It is not losing.
7. A fluent sentence is not a check.
8. Steelman. Say their claim in the strongest fair way. Then answer *that*. Inventing a better argument they did not make, then knocking it down, is not steelman.
9. A graph can mislead by scale. Before you trust a picture of “more,” ask where the axis starts.

If a real family disagreement is too hot today, pick the recap, the storm pages, or the spec sheet.²¹

²¹Willingham, “Critical Thinking”: the processes of thinking are intertwined with the content of thought; even trained scientists can fail outside a domain they know. Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020* (2020): backfire effects occur only occasionally; the continued-influence effect is the sticky problem; detailed refutation outperforms a bare denial. Translation at this table: repeat the check, not the rumor, on a sports or

The in-home try-it shape, once

Time. A short sit, then stop. Pedagogical design, not a national minutes table.

Materials. Household objects, a recap already on the table, a homework graph, a box already bought.

Safety. Water, heat. No flame for anyone who cannot already cook. No tasting unknown things. Tone: curious, not courtroom.

The fun. Recap versus box score. Rainfall redrawn from zero. Three boxes on paper.

The skill. How do you know. Two-source. Graph. Counterexample. Steelman.

Types you will meet, not a lesson bank: one-question dinner (3–5 min); talk-box after a claim (2–8 min); wait drill, invisible; kitchen fair test (10–30 min, labelled scientific reasoning); two-recipe or two-label (5–15 min); graph on the fridge or homework (5–10 min); paper argument map (8–15 min); counterexample hunt (3–8 min); steelman a sibling or a text (5–10 min); last thoughts (1–2 min); short written reason plus the check (10–20 min). A kitchen one-change check is a check type, not a science year.²²

The out-of-home try-it shape, once

“Outside” means the walk, the store, the library, team practice, the museum as looking.

Types you will meet: walk noticing plus a forecast check (5–20 min of a walk you were taking anyway); store-label looking (3–8 min); library two-book (10–20 min); museum as looking (10–20 min at *one* object); team-practice claim (3–10 min after, not during); bus or waiting two-source (2–5 min; public quiet); homework graph in the car (5 min; don’t do it for them).

snack claim. This is a translation, not an 11–15 trial of the handbook.

²²Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): 1098–1120; ages 7–10; explicit training plus probes beat probes-only on designing unconfounded experiments. Michael Schwichow, Christopher Croker, Corinne Zimmerman, Tim Höffler, and Hendrik Härtig, “Teaching the Control-of-Variables Strategy: A Meta-Analysis,” *Developmental Review* 39 (2016): 37–63; mean $g = 0.61$ on scientific-reasoning outcomes. A kitchen one-change check is that move, not generic critical thinking.

Safety, once. Roads, water, unknown plants, other people's dogs, aisle courtesy. No tasting unknown things. No shoplifting a "test." No lecture to a stranger's child. No sideline interrogation during a game. No gotcha against a coach or a shop.

The store box is a speaker. What does this package say? What's a second place we could look? The library is a free thinking hour. In the last federal tables that asked, about two-thirds of homeschool households used the library as a source of curriculum and books; in the 6th–8th and 9th–12th cells the share was still more than half.²³ Team practice is an ordinary game. The claim is last week's starting five, written down — not a lecture on the sideline.

The AI rules, once

Later chapters will point here. The student talks to the parent. The parent may use a tool. A chatbot is never the only partner.

Ages 11–12 (under 13). Scripts and parent–child talk. **Not live open chat.** No child account on a general-purpose chat, companion, or agent. Default: no child login.

After the student has tried, you **may**, on your account:

- Ask a tool to **explain this page to you** from a **named** book page (title, page number). You still have to understand it well enough to hear a wrong turn.
- Ask for **extra questions**, then **vet** them. Throw out any question that imports a live controversy, a secret, or a pretend expert.
- Use a labelled **SCRIPT** — a short spoken sequence — only **after the student tried**. The script is a prompt for you to say, not a paragraph for the student to copy as their reason.
- Ask for a **hint** after an attempt. A hint is not the finished reason.
- Ask a tool to **diagnose a reason the student already gave**. You hear the diagnosis and decide.

²³Jiashan Cui and Rachel Hanson, *Homeschooling in the United States: Results from the 2012 and 2016 Parent and Family Involvement Survey*, NCES 2020-001 (Washington, DC: National Center for Education Statistics, 2019), Table 6: 66 percent of homeschool households used the library as a source of curriculum and books in 2016; 6th–8th 61 percent; 9th–12th 58 percent. The 2023 First Look did not republish that table.

You **may not**:

- Park an **unsupervised chatbot** as the student's only partner.
- Create a **child account** on a general-purpose chat, companion, or agent.
- Ask the tool to **write the student's reason**, including a model-written steelman pasted as theirs.
- Ask the tool to **invent an expert identity** ("you are a sports-fairness professor") and then treat that voice as a person.
- **Grade** the student's thinking from a **detector** score.
- Print a **certificate of thinking**.
- Ask the tool to **invent facts** (who started last week, what the spec sheet lists, what the rainfall numbers were).
- Hand the student an **agent** (Hermes Agent, Grok Bot, or any cloud-computer worker) as a thinking partner.

Ages 13–15. Turning 13 is a legal hinge, not a thinking birthday. You still **hold the account**. There is still **no unsupervised chatbot as the only partner**. A labelled **SCRIPT after the student tried** remains the default. If you are in the room, the student may sit *next to* you while you use a tool, and may read a hint you have vetted. They must still produce the reason in their own words with the window closed. The may-not list above does not change. You may use an agent to draft a **SCRIPT for you**. The student still talks to you.

A tool that finishes the reason for you can make practice look better and leave the student worse when the window is closed. In a high-school math trial, an unguarded chatbot raised assisted practice about 48 percent and then cut the unaided exam about 17 percent.²⁴ This is a useful study, not a promise that every home will see the same result. A fluent reason from a machine is performance, not the student's check.

Detectors mislabelled more than half of some human essays as machine-written — 61.22 percent in one study.²⁵ Do not police a thirteen-year-old's paragraph with

²⁴Hamsa Bastani, Osbert Bastani, Alp Sungu, Haosen Ge, Özge Kabakçı, and Rei Mariman, "Generative AI without guardrails can harm learning: Evidence from high school mathematics," *Proceedings of the National Academy of Sciences* 122, no. 26 (2025): e2422633122. Field experiment, nearly 1,000 Turkish high-school math students: a ChatGPT-like tool raised assisted practice grades 48 percent relative to control, then cut unaided exam grades 17 percent. This is a math trial, not an 11–15 critical-thinking trial. The transferable caution is the crutch.

²⁵Weixin Liang, Mert Yuksekgonul, Yining Mao, Eric Wu, and James Zou, "GPT detectors

a score. Language models invent sources: in one study, 55 percent of GPT-3.5 citations and 18 percent of GPT-4 citations were fabricated.²⁶ If you asked a tool for a paper, open the paper. College Board does not treat AI-generated answers as the student's work. That is exam hygiene, not this book's thinking statute.

Names, in ordinary language. Hermes 4 is a chat model. Hermes Agent is a different runtime — a computer that can keep going. Grok is a chat assistant. Grok Bot is a cloud-computer agent. A public-school partnership for the assistant is a third Grok, not a U.S. homeschool product. Game artist makes pictures. None of these is a critical-thinking class, and none is a school product for this age. A chatbot answers in a window. An agent has tools and can keep going. Neither is a thinking partner.

COPPA covers children under 13. The 22 April 2026 compliance date has passed.²⁷ Keep accounts, logs, and keys on the parent side.

Not a secret friend. A tool that talks in the first person is still a tool. It does not get a bedroom, a private channel, or a promise to keep secrets from the parent.

You can teach this entire book with no AI. Many families will.

A life of the habit

Growing eleven-to-thirteen into fourteen-to-fifteen is more miles on the same road, not a new faculty. Revisit the same question next Tuesday.²⁸ After a look, let them say “I used to think... now I think...” Fridge ground rules — we listen; we ask

are biased against non-native English writers,” *Patterns* 4, no. 7 (2023): 100779: average false-positive rate on human TOEFL essays 61.22 percent.

²⁶William H. Walters and Esther Isabelle Wilder, “Fabrication and errors in the bibliographic citations generated by ChatGPT,” *Scientific Reports* 13 (2023): 14045: 55 percent of GPT-3.5 citations and 18 percent of GPT-4 citations were fabricated.

²⁷Children's Online Privacy Protection Act, 15 U.S.C. §§ 6501 *et seq.*; 16 C.F.R. Part 312. Federal Register 90 FR 16918 (22 April 2025): amended Rule effective 23 June 2025; general compliance date 22 April 2026. Bright line: children under 13. Keep accounts on the parent side. Homeschool is not a school official under FERPA by default. College Board AP Computer Science Principles guidance (fetched 1 September 2026): AI-generated answers are not treated as the student's work. That is CS / exam hygiene, not this book's thinking statute.

²⁸Willingham, “How to Teach Critical Thinking” (NSW Department of Education occasional paper, 2019): identify what is meant by critical thinking in each domain; identify the content those skills need; sequence; revisit. Robert H. Ennis, *The Nature of Critical Thinking* (2015): Disposition 9 is take a position and change it when evidence and reasons are sufficient.

what you mean; we give a reason; we can change our minds — then the next real disagreement. Posting the rules is not practice. Placement is by skill, not birthday. A diploma is not. There is no certificate of thinking. There is no window that closes at fifteen.

A Tuesday, said plainly

Here is an illustration, not a reported family. The parent asks, “How do you know we dominated?” and waits. The student says, “because we wanted it more.” They look at the box score. Exit: “One sentence. I won’t help.” On a fourteen-to-fifteen day, add a short written reason plus the check.

You can run that hour. There is no national table of thinking minutes for the kitchen.²⁹ Later chapters will say: run the session as in *The Thinking Hour*.

²⁹No IES or NCES page opened on 1 September 2026 prescribed a national homeschool thinking-minutes table. North Carolina DNPE *recommends* (not law) five hours across all subjects; Pennsylvania statute names 180 days or 990 secondary hours for the whole program. None of these is a national thinking block.

Chapter 1

What we mean



Figure 3: A kitchen-table still-life from a high three-quarter view: a recap page with unreadable greeked type, a box score with greeked numbers and no league logo, an open notebook with a blank dated line, and a window showing grey sky. No people. No logos. No readable UI.

Why this matters

How do you know we dominated?

That is not a vocabulary question. It is not a test of whether anyone can say *critical thinking*. It is a question about a game you already watched, asked at a table you already own, about a claim that might be true and might not. The recap is on the table, or in someone's mouth. Someone said the team *dominated*. Wanting that to be true is real. Wanting is not a look at the box score.

This chapter gives you one sentence you can keep for the rest of the book. Robert Ennis wrote it as a working definition and kept it: critical thinking is reasonable reflective thinking focused on deciding what to believe or do.³⁰ Reasonable: there are reasons, not only a mood. Reflective: you pause long enough to look at those reasons. Focused on deciding: the work has a point. The last two words do the household work. A twelve-year-old deciding whether a recap's "dominated" is true, and a twelve-year-old deciding who should be captain, are both inside that sentence. One is a decision about what to believe. The other is a decision about what to do.

"Critical" in this house does not mean "find the fault in people." Ennis is plain about that. The English word can sound negative. The concept he is offering is not.³¹ You are not training a small prosecutor. You are teaching a young person to pause, to name a reason, and to look at one other thing before they settle — and, at this age, to do justice to a challenge that is now a person in the room, not only a story character.

Beside Ennis sits a second sentence, not a rival brand. Matthew Lipman said critical thinking is skillful, responsible thinking that helps good judgment because it relies on criteria, is self-correcting, and is sensitive to context.³² On a team: what

³⁰Robert H. Ennis, "What is critical thinking?," criticalthinking.net, last revised 26 November 2010. "Critical thinking is reasonable reflective thinking focused on deciding what to believe or do." Same sentence in Robert H. Ennis, *The Nature of Critical Thinking: Outlines of General Critical Thinking Dispositions and Abilities* (2013; last revised September 2015), <https://criticalthinking.net/wp-content/uploads/2024/04/The-Nature-of-Critical-Thinking.pdf>. Access date for URLs in these notes: 1 September 2026.

³¹Ennis, *The Nature of Critical Thinking* (2015): although the word *critical* is sometimes used in a negative sense, the concept presented is not negative. Brief conception includes developing and defending a reasonable position, "doing justice to challenges." Ability #4 (2015 numbering) is a recent addition: understand and use elementary graphs and maths.

³²Matthew Lipman, "Critical Thinking—What Can It Be?," *Educational Leadership* 46, no.

are we going by? Can we change our mind? Is “captain” a skill job, a fairness job, or a popularity job? Those are aims for the talk, not a promise that a branded hour will raise a reading score. If a branded enquiry hour is named later, the large English trial that found no extra months of progress belongs in the resources chapter.³³

Two refusals belong in the same sitting as the sentence, or the sentence becomes a poster.

Young adolescents already think in domains they know. Daniel Willingham put it in a line a parent can use: this is a type of thought that even three-year-olds can engage in, and even trained scientists can fail in.³⁴ If a three-year-old can engage in it in a known domain, an eleven-year-old is not waiting for a switch to flip. Mark Felton and Deanna Kuhn watched seventh- and eighth-graders produce argumentative dialogue. They are not empty of reasons. They are more occupied with producing their own side, and less strategic about the other person’s case, than young adults from the same population.³⁵ A student who offers a fluent own-side “because” about a sport she plays is thinking. She has not finished the dual job.

Thinking is not a bicycle they now possess because they can argue with a sibling. People have treated critical thinking as a skill like riding a bicycle — once learned, usable in any situation. Thinking is not that sort of skill. The processes of think-

1 (1988): 38–43. Critical thinking as skillful, responsible thinking that facilitates good judgment because it relies upon criteria, is self-correcting, and is sensitive to context. ASCD PDF, https://files.ascd.org/staticfiles/ascd/pdf/journals/ed_lead/el_198809_lipman.pdf.

³³Education Endowment Foundation, “Philosophy for Children – second trial,” completed November 2021, independent evaluator NFER. 198 schools; Key Stage 2 / Year 6 ≈ 10–11, the floor of this band. FSM reading and whole-cohort reading: 0 months additional progress; no evidence of impact on maths; 5/5 padlocks. Aims in this chapter; the trial in the resources chapter. <https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/philosophy-for-children-effectiveness-trial>.

³⁴Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* (Summer 2007). Critical thinking “is a type of thought that even 3-year-olds can engage in—and even trained scientists can fail in.” AFT PDF, https://www.aft.org/sites/default/files/media/2014/Crit_Thinking.pdf.

³⁵Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, nos. 2–3 (2001): 135–153. 33 seventh- and eighth-graders versus 31 community-college young adults, same inner-city population. Teens more preoccupied with producing the dialogue and less strategic about the goals of argumentative discourse; more own-side. Lab topic was capital punishment; that topic is not an exercise in this book. Finding used: discourse strategy, not the lab content.

ing are mixed with the content of thought.³⁶ You can teach a maxim. Without something the student actually knows, and without practice on that something, the maxim will not implement. That is not a reason to wait until sixteen. It is a reason to practice on the recap, the window, the captain vote, and the article on the sofa, and to revisit next Tuesday. Practicing on a sports claim does not install unaided good judgment on unfamiliar content. Near is not far.

This book is not a sequel to *Critical Thinking for Life*, and not a reprint of *Critical Thinking Skills for Little Thinkers*. One pointer each, then we teach at eleven to fifteen. The objects in the younger book were a swing, a cereal box, a park sign. This book steps the object to a page, a table, and a graph. The five moves still scale. This book adds two-source, graph, counterexample, and steelman. Leave the page, later, is still leave this recap. The work this week is ordinary.

What this idea unlocks is everything later. If “critical thinking” still means a personality, a compliment, or a workbook cover, the moves in the next chapter have nowhere to sit. If it means Ennis’s activity, you can hear a wrong turn this week: a why-story offered as a look; a fluent recap offered as a check; “critical” as finding fault; own-side talk offered as a finished argument. Hearing that is worth the struggle.

You do not need to be a philosopher. You do need to understand today’s idea well enough to hear “because we wanted it more” as a why-story, not a look at the box score.

This week you can learn Ennis’s sentence in ordinary language, and how to hear “because we wanted it more” as a why-story. Today the student can look at a recap and a box score (or a forecast and the sky), say how they know, and change the sentence if the look goes the other way.

For the parent: understand it yourself

Many adults feel rusty around the word *critical*. That is ordinary. Five minutes of this section, then the warm-up at the end, is enough for tomorrow. The student still does the talking.

³⁶Willingham, “Critical Thinking” (2007): people have assumed that critical thinking is a skill like riding a bicycle; research from cognitive science shows that thinking is not that sort of skill; the processes of thinking are intertwined with the content of thought.

Everyday picture. The recap is on the table, or someone is still talking about last night's game. "We dominated." Two decisions hide in that sentence. What do you believe? And what do you do — replay the clip, argue with a sibling, pick a captain for Saturday? Ennis's sentence is the picture of that kitchen. The thinking is reasonable if the student can name a reason. It is reflective if they pause long enough to look at the reason, and at what follows if the reason is weak. It is focused on a decision, not on sounding sharp.

A second kitchen picture, still ordinary. Two people want to be captain. "It should be me." That is a decision about what to do. The reasons might be good. They might be volume wearing a fairness-word. Ask what they mean by *captain*. Wait. Ask what someone who disagrees would say. Look at one other thing: last week's jobs, who spoke to the ref, who organizes. That is already the activity, sitting inside a Tuesday you were going to have anyway.

Precise picture. Write the sentence out: *reasonable, reflective thinking about what to believe or do*. Circle *reasonable*. Reasons can be checked. A feeling can be real and still not be a reason. Circle *reflective*. You pause. Circle *believe or do*. The activity is both. Ennis's longer outline does not specify a grade level.³⁷ It is not a grades 6–10 syllabus. Steal the questions a parent can hear: Why? What do you mean by...? What would be an example? What would *not* be an example? Steal the adolescent increment: doing justice to challenges. Graphs are now on Ennis's list as an elementary ability. That licenses a rainfall picture later without turning this into a statistics course. Those are moves. They are not a bicycle.

Lipman's three features sit beside that sentence as aims, not as a trial. A criterion is what you are going by. Self-correction is permission to change a mind. Context is noticing that "always" fits last week's starting five as a list, and does not fit a feeling about the season. You can still ask, "What are we going by?" You can still say, "You may change your mind."

Willingham's bicycle belongs next to Ennis. Riding, once learned, works when-

³⁷Robert H. Ennis, "An Outline of Goals for a Critical Thinking Curriculum and Its Assessment," *criticalthinking.net*, revised 18 October 2000. The outline "does not specify grade level, curriculum sequence, emphasis, teaching approach, or type of subject-matter content." Clarifying questions include Why? What do you mean by...? What would be an example? What would not be an example? Ability 4 (2000 numbering) includes source credibility and agreement among sources. Disposition 9 in the 2015 PDF: take a position and change it when evidence and reasons are sufficient. <https://criticalthinking.net/longdefinition/>.

ever a bicycle is present. Thinking is not that sort of skill.³⁸ You can teach “look from more than one side,” but without knowledge of the thing, they cannot.³⁹ Generic programmes have had limited success; transfer, when tested, has been absent, modest, or quick to fade.⁴⁰ Name the move in a known domain. Revisit. A word-problem analog Willingham reports: few people (19 percent) saw that a band-marching problem matched a garden problem solved minutes earlier; a hint raised solution only to 35 percent.⁴¹ That analog is a word-problem study, not an eleven-to-fifteen finding. Cite it as the constraint that still binds the age-thirteen thinker. You will cue “this is like the recap” more than once. Near is not far.

A third precise mark, so you can hear the mash that will walk into the room. Kuhn’s line, in ordinary language: young people often mash a story that *makes a claim plausible* with evidence that the claim is *true*. The distinction progresses. Substantial variation remains among adults.⁴² At this table the mash sounds like: “How do you know we dominated?” “Because we wanted it more.” Wanting is a why-story. The box score is a look that it happened, or did not. Hear the mash. Then look at the numbers.

Own-side talk is the default at this age, not a defect. Felton and Kuhn’s seventh- and eighth-graders produced reasons. They were more preoccupied with produc-

³⁸Willingham, “Critical Thinking” (2007), bicycle passage as in note 36.

³⁹Willingham, “Critical Thinking” (2007): you can teach maxims about how students ought to think, but without background knowledge and practice they probably will not implement the advice; multiple-perspectives maxim fails without knowledge of the issue.

⁴⁰Daniel T. Willingham, “How to Teach Critical Thinking,” NSW Department of Education occasional paper (2019). Programs meant to teach general critical thinking skills have had limited success; when transfer is tested, positive results have been absent or modest and quick to fade. “We are not even sure the general skills exist, but we are quite sure there is no proven way to teach them directly.” Author PDF, http://www.danielwillingham.com/uploads/5/0/0/7/5007325/willingham_2019_nsw_critical_thinking.pdf.

⁴¹Willingham, “Critical Thinking” (2007): band-marching word problem isomorphic to a garden / least-common-multiple problem solved minutes earlier; few subjects, just 19 percent, saw the analog; a hint raised solution only to 35 percent. A word-problem study, not an 11–15 finding. Used here as the constraint that still binds the age-13 thinker.

⁴²Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): 1–8. Young children have difficulty differentiating explanation of why a claim makes sense from evidence that the claim is true; the distinction progresses, “but substantial variation remains among adults.” Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1 (2000): 113–129: increasing cognitive control over the coordination of theory and evidence may not develop fully even by adulthood; six-year-olds still differentiate in only a limited sense and set of contexts; more complex confusions remain common in older children, adolescents, and adults.

ing the dialogue, and less able to behave strategically toward the other person's case, than young adults.⁴³ Dual focus is promptable, not default. If you *ask* “what would someone who disagrees say?”, many twelve-year-olds can produce a counter. If you do not ask, they often will not.⁴⁴ The parent-facing sentence: the prompt is the work. Silence is not a diagnosis of incapacity.

Kuhn's other adult word is useful here and easy to misuse. Multiplism — “that's just your opinion,” anyone's view as good as anyone else's — becomes prevalent at adolescence. Only a minority of adults reach the later stance in which some views can be better supported than others.⁴⁵ Two weather forecasts can both be “opinions” in the multiplist sense, and one of them can still be better supported by looking out the window. Who should be captain is not “just opinion” in the sense that no reasons apply. It is a judgment under criteria. This book does not say “by fourteen they are evaluativists.” It says: keep the useful residue that there is a window, a box, a list.

There is no thinking gene. There is no window that closes at fifteen. There is no stage calendar in this book. Metacognitive thinking about one's own thought begins much earlier than a stage poster would have it, and it may not develop fully even by adulthood.⁴⁶ An eleven-year-old may ask a sharp “how do you know” about a recap and still mash a why-story with a look. A fifteen-year-old may write a fluent paragraph and still practice the same box score. Placement is by skill, not birthday.

Wrong answers you should be able to hear

1. “*Because we wanted it more.*” A why-story offered as a look. Desire, effort,

⁴³Felton and Kuhn, “The Development of Argumentative Discourse Skill” (2001), as in note 35.

⁴⁴Deanna Kuhn and Wadiya Udell, “Coordinating own and other perspectives in argument,” *Thinking & Reasoning* 13, no. 2 (2007): 90–104. Young adolescents less able than adults to coordinate attention to both positions; inattention to the opposing position, but not inability to address it when explicitly asked. Unprompted dual-function arguments less than a third of the time; adults about half of the time in that constrained task.

⁴⁵Deanna Kuhn, “A Developmental Model of Critical Thinking,” *Educational Researcher* 28, no. 2 (1999): 16–26, 46. Absolutism the norm in childhood and into adolescence and even adulthood; multiplism becomes prevalent at adolescence; only a minority progress to evaluativism. Meta-knowing is what develops. Not a teaching calendar.

⁴⁶Kuhn and Pearsall, “Developmental Origins of Scientific Thinking” (2000): contrary to Inhelder and Piaget's depiction of second-order operations as emerging at adolescence, metacognitive thinking about one's own thought begins to develop much earlier, and may not develop fully even by adulthood. This chapter does not assign Piagetian stage ages to 11–13 versus 14–15.

and mood are earlier and easier than a table of minutes and points. The student used the earlier category where you asked for a check. Hear it. Say: “I hear that you wanted it. How do you know we *dominated*?” Then look at the box score. If the look goes the other way, they may change the sentence. That is the work. It is not losing.

2. “*Critical thinking means finding what is wrong with people.*” The English word did the damage. Ennis’s concept is not negative. Return to the recap. The work is deciding what to believe or do, with reasons, and doing justice to a challenge. Ranking people is a different speech act.
3. “*Once they learn it, they can use it anywhere — like riding a bike. They argue with a sibling, so they have it.*” That is the assumption Willingham answered. Thinking is mixed with what is being thought about. A student who can check a recap and then treats a new article as if the same moves were automatic has assumed the bicycle. Name the domain. Practice the decision *here*. Cue the similarity next Tuesday: “this is like the recap.”
4. “*They’re too young. We’ll wait until high school.*” Eleven-to-fifteen already think in domains they know. Trained scientists fail outside theirs. Waiting for a readiness gate is the outmoded “teens cannot reason” story. Start now, with ordinary life. A fluent own-side “because” about a sport they play is thinking. Dual focus is the work, not a later faculty.
5. “*We talk a lot, so they’re already doing it.*” Talk is not automatically the activity. Implicit hope that “we value thinking” will not do the naming.⁴⁷ If you want the student to ask how they know, you have to ask how they know, often, out loud. A fluent sentence is not a check. Leave this sentence and look at one other thing. Own-side talk offered as a finished argument is the default. The prompt for the other side is the increment.

A sixth you will also hear: “I already know, because the recap said dominated,” or “because the article said,” said as if the saying were the look. Testimony is information. The student already weighs speakers. Still ask: did you see, or did

⁴⁷Philip C. Abrami et al., “Instructional Interventions Affecting Critical Thinking Skills and Dispositions: A Stage 1 Meta-Analysis,” *Review of Educational Research* 78, no. 4 (2008): 1102–1134. Improvement “cannot be a matter of implicit expectation.” Mixed-age literature. Abrami et al. (2015, *RER*): middle ages 11–15, $k = 78$, $g = 0.37$ on standardised CT tests, not kitchen talk; dialogue + authentic problems + mentoring $g = 0.57$ is 19 mixed-age studies, not this band. The overall $g+ = 0.30$ is mixed-age.

someone tell you, or do you hope so? Then, if a check is cheap and safe, do the look — the box score, the sky, a second named page.

Five-minute parent warm-up

Do this before the lesson, with a recap or a window and a scrap of paper, no student in the room.

Minute 1. Write Ennis's sentence. Say it out loud in ordinary words: "The work is deciding what to believe or do, with reasons, after a pause — and doing justice to a challenge."

Minute 2. Take one claim from this house — last night's game, who should be captain, the sky. Write two columns: *believe?* and *do?* Put one reason under each. Put one check under the reason.

Minute 3. True or false, said aloud: "Wanting a win is the same as looking at the box score." "Critical means finding fault." "Once you have it, you have it everywhere." "If they argue, they have the bicycle." You are practicing the hearing, not racing.

Minute 4. Imagine the student saying "because we wanted it more." Decide, without performing, what a scold would do. Decide what "I hear that you wanted it. How do you know we dominated?" would do instead. You are installing the miss so you can hear it tomorrow.

Minute 5. Write the sentence you will actually say: "How do you know we dominated?" Put the pencil down. That sentence is the lesson.

If you can do those five minutes, you are ready to sit down. The student looks. You hear.

How to teach it this week

The thinking-hour chapter in the front of this book is the full version. Here is the shape scaled to this idea.

Warm-up (2–3 minutes, unaided). One claim already in the house. "What did we think last time about the recap?" No device. No definition.

Short model (3–5 minutes). One new idea, one picture, one spoken sentence. You look at a recap and a box score, or out a window, and you say how *you* know,

in two lines. Then you stop. You are showing the pause, not delivering a lecture titled *Critical Thinking*.

Student attempt (5–12 minutes). The longest block, and it is still short. The student looks. The student talks. You wait. Struggle before rescue: ask, wait, hint, then a short model on *your* scrap, not as their reason.

One good question. Not “what is critical thinking?” A question that names the idea: “How do you know we dominated?” “What do you mean, *dominated*?” “Did you see, or did someone tell you, or do you hope so?”

Talk (3–8 minutes). One spoken sentence, or a line they write: “I thought we dominated. We looked at the box score. The score was close.” You are not assigning an essay. Eleven-to-thirteen may talk the line while you write it. Fourteen-to-fifteen may write a short reason plus the check.

Stop. While they still have a look left in them. A second sitting later in the week beats a long sit that ends in a fight.

That shape is a practice you impose on whatever recap, walk, or page is already in the week. It is not a 180-day plan. The honest pitch is *often enough that the question is familiar*. Ten minutes of a named move, a few times a week, is the right ambition.

Exact wording you can say. Sports: “How do you know we dominated?” “What do you mean, *dominated*?” “Did you see, or did someone tell you, or do you hope so?” Captain: “What do you mean, *captain*?” “What are we going by?” “What would someone who disagrees say?” Sky: “How do you know it’s going to rain?” “We can look.” Article: “How do you know that date?” “What’s a second place we could look?” When you are about to take over: “Your eyes. I’ll wait.”

Then wait. After you ask, a slow three is a convention, not a sacrament. After they stop, wait again. If they are mid-reason, do not cut them off. Look at the box score or the window, not at the student, if the silence is hard. At eleven to fifteen the shrug often looks like refusal. Leave it. Mary Budd Rowe measured those pauses in elementary *science* class. Robert Stahl later called the silence think-time. Use the move. You are not replicating a science-class study.⁴⁸

⁴⁸Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables, Their Influence on Language, Logic, and Fate Control,” paper to the National Association for Research in Science Teaching, Chicago, April 1972, ERIC ED061103. Elementary science class; typical wait about one second after a question and 0.9 seconds after a student response; extending both to 3–5 seconds

Age-band moves: 11–13 / 14–15

11–13. Fluent own-side reasons in domains they know. Address an opposing position when asked. The check is near: the recap and the box score, the forecast and the sky, two pages about a date. How-do-you-know is improving; the why-story mash is still in the room. Mind-change is often perceptual: I thought we dominated; we looked; the score was close. Wait can include writing one line. Steelman, when it arrives, is new and short — one sentence. Dual-function argument as a default is not a stable skill this week. You prompt it.

14–15. Same moves, different grain. Same dual-focus competence, with more chance that dense exercise has been had. They can hold a short written reason plus the check. Steelman can be two sentences. Wait can include a closed-window line after any tool. They can be asked, sometimes, what a picture does *not* tell them. They are still constrained by knowledge. Dual-function even in adults is only about half the time in a constrained task. Multiplism remains available. Fluency still feels true. There is no diploma at the end of this band, and no window that just closed.

Not a stable skill at either band: unaided far transfer; Ennis’s full adult outline; unprompted dual focus as a group norm; evaluativist epistemology as a group norm. Same faculty. Different grain. Not two species of student.

First try-it for the student. The recap already on the table. Someone has claimed the team dominated. Say: “How do you know we dominated?” Wait. If they name wanting or mood, they used a why-story. Hear it. If they say “because the recap said so,” they used testimony. Then look at the box score. If they stare, model on a forecast versus the sky — “I thought rain. I looked. It is dry.” — then return to the recap. Later: mention that last week they *did* dominate, without looking at this game. If they still say dominated because last week, last week is weak. Ask what we can look at *now*.

How to fade help. First sitting: you look together, you say how you know, they echo. Second: they look, you wait, you hint (“we could open the box score”). Third: they look and say the sentence. Fourth: a cousin of the same claim — the window, a captain vote — with the book closed. The word *critical thinking*, if it

changes discourse. Not a homeschool trial. Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885, 1994. Think-time as a later instructional construct; about three seconds as a convention, not a sacrament; eight categories of silence; written for classroom teachers generally.

arrives at all, arrives after the look.

When to stop talking. When you hear yourself answering. When the sit has become a lecture titled *What Thinking Is*. When the student has offered a reason and you have already asked a second and a third question before they finished the first. One good question beats five. Stop while they still have a look left.

Practice that actually builds learning

Blocked, for a new move. The day you introduce “how do you know,” give a short set that is only that: the recap, the claim, the look. The day you introduce who should be captain, only the disputed job. Mixing too early makes the student hunt for the “right” school move instead of looking.

Mixed, for when to use it. Later the same week, the recap reappears next to the window and the article. Mixing is the practice of choosing: is this a score, a sky, a captain job, or a date on a page? You impose that mix on the week you already have.

One incorrect example to diagnose. A fluent sentence with no check: “We dominated because we wanted it more.” Or: “It should be me because it’s fair.” Hear the why-story. Hear the fairness-word. Neither is yet a look. The repair is a better question, then the box score or last week’s jobs, then — if needed — a named fact. Silence in the face of a false reason is not kindness.

These are illustrations, not reported families.

Named try-it: Sports claim (in-home, with an after-game cousin)

Time. Five to ten minutes. Then stop.

Materials. A recap already on the table — paper, a parent-opened tab, or memory of *this* game — plus a box score if you have one. A scrap of paper if you want a caption.

Safety. No humiliation of a player. No sideline interrogation during the game. The tone is curious, not courtroom. Greek the names if you print a page for the book; at the table, use the real game you watched.

The fun. Catching the verb. Being the person who finds out whether “dominated” survived the numbers.

The skill. Decide what to believe. Did we dominate? How do you know? Wanting is a why-story. The box score is evidence *that*.

Say: “How do you know we dominated?” If they look at the score and it was close, they may say the new thing. If they refuse to change, hear the old sentence, look again together, and offer: “You thought we dominated. We looked. You can say it was close.” Changing a mind when the check goes the other way is the work. It is not losing.

Out-of-home cousin: after a game, not during. Three to ten minutes in the car or on the walk home. Same question. Same safety. The game you watched is the object. Last week’s starting five, written down, is a second look if “always” walks in.

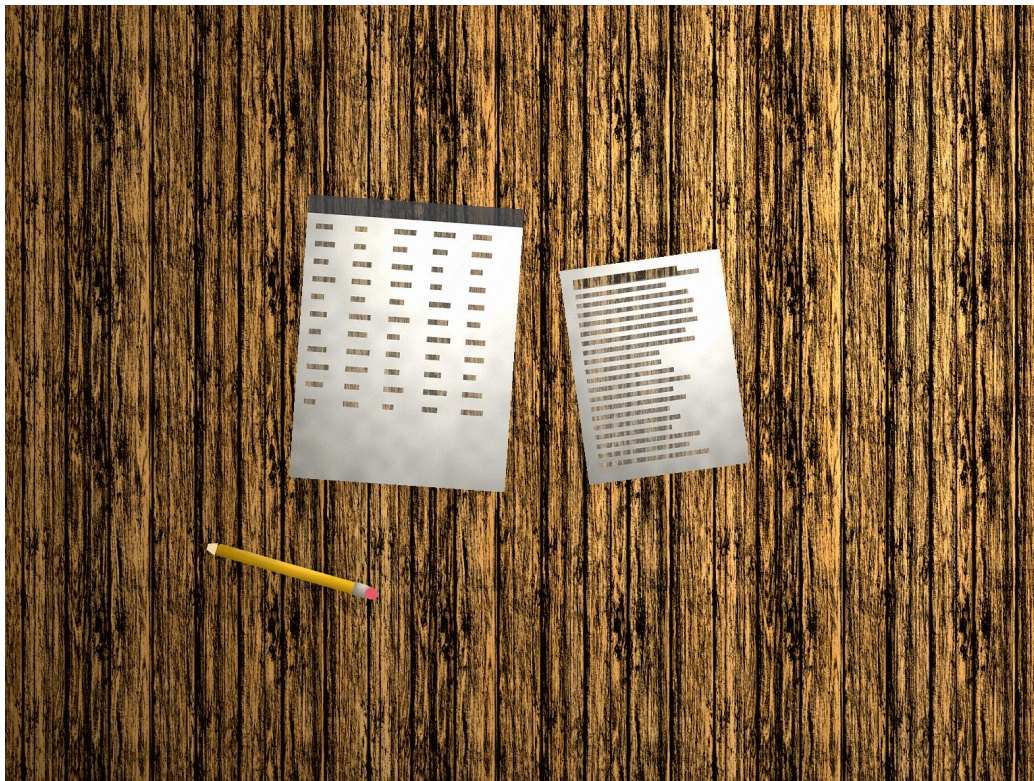


Figure 4: A box score on a table with greeked team names and numbers, a recap page with unreadable type beside it, no league logo, no readable UI, no people.

Named try-it: Who should be captain (in-home, with a practice-after cousin)

Time. Five to ten minutes, when it actually happens. Skip a staged fight.

Materials. The actual decision, or a hypothetical about *this* team. Last week's jobs if you have them: who started, who spoke to the ref, who organized.

Safety. No humiliation. If the stakes are too hot, postpone and pick a smaller claim. You are not putting anyone on trial in the hallway or on the sideline.

The fun. Being heard. Having the criterion named.

The skill. Decide what to do, with criteria — skill, fairness, who the team will follow — not volume. Prompt: what would someone who disagrees say.

Say: “What do you mean, *captain*?” Then: “What are we going by?” If they say “because I want it,” that is a wish. If they say “because it’s fair,” ask what *fair* is being asked to mean this time. Look at one other thing: last week’s jobs, who the team actually followed. Then decide what to do. The decision can still be yours as the adult, or the team’s. The student still got to name a reason, hear a challenge, and look.

Out-of-home cousin: after practice, not during. Same five to ten minutes. No sideline interrogation. Ordinary game, ordinary job. Not a culture-war about sport.

Named try-it: Forecast versus sky (out-of-home)

Time. Three to eight minutes of a walk you were taking anyway, or at the door before you go.

Materials. The actual sky. Two forecasts if you have them. Optional: a scrap for today’s mark.

Safety. Ordinary looking. Roads. No staring at the sun. If lightning, go in.

The fun. Being right, or changing your mind, about weather.

The skill. Testimony versus observation. “I thought it would rain.” Look. A confident caption is not yet the window. Two forecasts can both be “opinions.” One of them can still be better supported by the sky.

Say: “How do you know it’s going to rain?” If they say “because I want it to be sunny,” they offered a wish where a look was asked for. If they say “the app said,” take the app seriously, then look. Repeat the check — the sky — not the app’s sentence in a singsong. Come back in ten minutes if you want a second look. Mind-change across a short wait is still the activity.

Out-of-home cousin of the recap: the same question, a different object. You do not need a nature programme. You need the sky that is actually there.

Named try-it: “The article said” (in-home, with a library cousin)

Time. Eight to fifteen minutes with a page you were already reading.

Materials. One short article about a date or a storm, plus a second named page — an encyclopedia entry, a later chapter, a parent-opened source. Not a live-news-cycle fight.

Safety. Ordinary reading. Skip a page that is a live controversy. If the display at the library is a live fight, walk to a different bay.

The fun. Catching the mash. Being the person who noticed that one fluent page is not yet two.

The skill. One source, fluent. Second source. “The article said” is testimony. A second named page is a look.

Say: “How do you know that date?” If they say “because the article said,” they used one speaker. Ask: “What’s a second place we could look?” Name both sources. Say where they agree and where they don’t. You do not have to pick a team tonight.

Out-of-home cousin: two library books. Ten to twenty minutes. The student chooses among safe books on one animal, one storm, or one historical date. You still pick the prompt. Same move, books they chose. A later chapter will spend two sources as the centre. This week, one article plus one second page, or two books, is enough.

Talk box

This is an illustration, not a reported family. The recap is on the table. Someone has said the team dominated. The parent has not announced a definition.

Opening question

“How do you know we dominated?”

Not: “What is critical thinking?”

Follow-ups (pick three to five; you will not use all of them every sitting)

1. What do you mean, *dominated*?

2. Did you see, or did someone tell you, or do you hope so?
3. What else could be true?
4. What's a second place we could look?
5. You thought we dominated. We looked. You can say the new thing.

How to wait

Ask. Count a slow three in your head. Look at the box score, not at the student's face, if the silence is hard. After they stop talking, wait again before you speak. If they are mid-reason, do not cut them off. A follow-up that arrives in half a second trains the student to wait *you* out, not to look. Three seconds is a convention, not a sacrament — Stahl's think-time, from classroom teaching. Rowe's windows were science class. Use the pause. Neither is a homeschool trial of critical thinking. At this age the shrug often looks like refusal. Leave it.

What a stuck silence usually means

They offered a why-story where a look was asked for, and they can feel the mismatch. Or wait-time after the question was zero, and they learned that you will fill it. Or they think "critical" means finding fault, and they are hunting for who is in trouble. Or they think listening means giving up the starting spot. Or the question was vague. Or they are searching for a word. Or they are guessing what you want. Or the question was a recitation item in disguise — you already had "we did not dominate" in mind as the only allowed answer. Next move: smaller question, wait, point back at the recap and the box score. "Open the table?" is a hint. The finished verdict is not a hint; it is the grab. Done enough this week: a spoken sentence. "I thought we dominated. We looked. The score was close."

For the student

This page is for you.

Critical thinking is a grown-up name for something you already do. You decide what is true. You decide what to do. You give a reason. You look. At your age the other side is often a person in the room. Doing justice to their challenge is part of the work.

It is not a way to find what is wrong with people. It is not a bicycle you get on once and then ride everywhere. It is thinking about this recap, this sky, this captain vote, this article — things you know something about.

A tiny worked example

There is a recap on the table.

Someone says the team dominated.

You want that to be true.

Wanting is not how you know.

You look at the box score.

The score was close.

You can say: “I thought we dominated. I looked. It was close.”

That is the whole trick for today. You are allowed to change the sentence when you look.

Two tries

1. Look at a real recap and a real box score, or at last week’s starting five written down. Say how you know whether “dominated” or “always” is true. If you hoped for a different answer, say what the numbers show.
2. Look out a real window, or stand at the door. Say how you know about the sky. If you thought it would rain and it is dry, you may change your mind. That is not losing.

Write a line if writing is easy: “I thought . ***We looked. Now I think .***” Talk the sentence if writing fights the sitting. Your grown-up can remember it.

Explain it back

Tell someone at the table, in your own words, how you know the team dominated — or did not. Then say one time you wanted the answer to be different, and you looked anyway. Then, if someone disagrees about who should be captain, say their side so they would nod, before you answer it.

Challenge

Some people say “we dominated” because they wanted it. Some people say “it should be me” because they want the job. Some people say “it will rain” because an app said so, and they do not look. How do you look at the *thing* instead — the box score, last week’s jobs, the sky?

You are allowed to struggle. If you get stuck, ask for a hint — not the finished verdict. A sentence about what you looked at is enough for today. You do not have to call yourself a critical thinker.

A picture a computer made of a box score is a scene. It is not the game.

If it isn't clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent, and none of them is a reason to wait for a birthday.

1. The student offers a why-story where a look was asked for, and cannot yet hear the difference.

“Because we wanted it more.” “Because it’s fair.” “Because I want it to be sunny.” Desire or a good story is doing the work of a check. Next move: smaller claim, nearer check. One recap. One question. Wait. Name the why-story kindly (“I hear that you wanted it”) and ask the how-do-you-know again. Then look together. If this is still the bottleneck after several weeks of short sits, stay here. The moves in the next chapter will not hold on top of a student who cannot yet tell a why-story from a look. A human who will sit with a box score and wait, not a tablet that narrates the answer, is a reasonable next step if you have tried the small-set work and the mash is still the whole hour.

2. The student recites a definition, or hunts for who is at fault, and cannot point at the recap.

The cue is still your voice, or the English word *critical*. Next move: objects first, look second, question third. Finger on the recap and the box score. “How do you know we dominated?” After an attempt, one incorrect example (“this person said dominated because they wanted it — what did they use?”). A student who can chant a definition and cannot open the box score is not ready to skip this. A tutor is useful if recitation remains the default after a couple of weeks *and* the hour has become a fight.

3. The student will not talk, or every sitting ends in a shrug, and the silence after your question is a wall.

A shrug is the mind at rest — or the wait was zero, or they are guessing what you want, or they think listening means giving up. Next move: shorter sits, one object,

the talk-box opening, wait a slow three twice. If silence is hard, look at the box score, not at them. If you hear yourself answering, you have started doing the work. If the hour has become a fight, a human who will wait, not a chatbot that fills the silence, is the release valve.

When to slow down. Why-stories still wearing reason-clothes. Recitation still the default. Sits so long that looking never starts. “Critical” still meaning fault. Own-side talk treated as a finished argument, with no prompt for the other side. Those are brakes. “Not ready” because of age is the brake this book will not use. “Not ready” because a why-story and a look have not yet come apart is a real brake. Ennis’s long outline is not a reason to skip the recap.

When to go ahead. The student can look at a recap and a box score and say how they know, not how they hope. A window check has produced at least one mind-change or one confirmed look. A captain vote has had “what do you mean” asked, and one other thing looked at. An article has had a second named page. Short sits are ordinary. Then the moves in the next chapter have somewhere to sit. Being “good at arguing” because a student loves to talk is not a reason to skip the look.

When to get a human tutor. You have run the recap, or the window, or the wait after the question, for a stretch of daily sittings, and the same diagnosis is still the one in the room, and the hour has become a fight. A tutor is a release valve, not a failure of the sitting. Keep yourself as the person who can still hear a why-story-as-reason and a fluent recap with no box score. Outsourcing the hearing is the thing to avoid, not asking for help.

Hearing which strand is thin — talk without a look, or a look without talk, or own-side talk with no prompt for the other side — is enough.

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The short version: the student talks and looks first. A tool may explain today’s idea *to you*, suggest extra questions you then vet, write a short script for *you* to say after the student has tried, offer a hint after an attempt, or help you diagnose a reason the student already gave.

Leave these out of the hour: a chatbot as the only partner; a tool that writes the

student’s reason; a pretend expert; a detector score; a certificate of thinking; a tool asked to invent who started last week. Ages eleven to twelve are scripts and parent–child talk, not live open chat. Ages thirteen to fifteen: turning thirteen is a legal hinge, not a thinking birthday. Still no unsupervised chatbot as the only partner. You hold the account.

A language model will happily finish the verdict. Fluent talk from a tool is performance, not the student’s look. In a high-school math study, an unguarded chatbot made practice look better and left students worse when the window was closed. That paper is mathematics, not a thinking trial. The crutch is still the sitting condition.⁴⁹

A recap, a window, and a second page are tools too. Use them, then fade them.

What “done enough” looks like

Placement is by skill, not birthday. A “grade 7 critical thinking workbook” is a publisher’s scope, not a legal grade, and not a transcript line. The record, when you need one, is a dated notebook plus, when ready, a short written reason plus the check. The title a stranger can read is still English, or Science. It is not Critical Thinking I.

Checklist before moving on

- You can say Ennis’s sentence in ordinary language: deciding what to believe or do, with reasons, after a pause — and doing justice to a challenge.
- You can hear “because we wanted it more” as a why-story, not a look at the box score.
- The student can look at a recap and a box score (or a list) and say how they know, not how they hope.
- At least one window or doorstep check has happened: testimony or a wish, then the sky.

⁴⁹Hamsa Bastani, Osbert Bastani, Alp Sungu, Haosen Ge, Özge Kabakcı, and Rei Mariman, “Generative AI without Guardrails Can Harm Learning: Evidence from High School Mathematics,” *Proceedings of the National Academy of Sciences* 122, no. 26 (2025): e2422633122. GPT Base raised assisted practice grades 48 percent relative to control, then cut unaided exam grades 17 percent, in a high-school mathematics randomized trial. Not an 11–15 thinking trial. The sitting condition — a tool that produces the response — is the mechanism used here.

- At least one captain vote has had “what do you mean,” “what would someone who disagrees say,” and one other thing looked at, without humiliation.
- An article has had a second named page, or two library books have sat on the table.
- The student has changed a sentence after a look, or has confirmed a look, without being asked to perform a trait.
- Sits can be short. A spoken sentence is enough at eleven to thirteen. A short written reason plus the check is welcome at fourteen to fifteen. You did not require a definition or a diploma sentence.
- You can hear a why-story-as-reason, a fluent recap with no box score, “they’re too young,” and “they argue so they have it,” and you can ask a good question, without taking the looking.

If most of that list is true, go on to the moves that scale, even if the birthday says otherwise. If the birthday says “ninth grade” and the why-stories are still doing the work of the looks, stay. The next chapter names wait, meaning, how-do-you-know, what-else, and how-could-we-check — plus two-source, graph, counterexample, and steelman — with the recap still in the room.

A path through ordinary challenges is the promise. A diploma is not.

Chapter 2

Moves that scale



Figure 5: A kitchen-table still-life from a high three-quarter view: a small unbranded timer, a recap page with greeked type, a second book, a simple rainfall bar with no civic caption, a broken paper strip that says always in unreadable lettering, and two facing empty chairs. No people. No logos. No branded wheel.

Why this matters

What do you mean, *always*?

That is not a request for three reasons. It is not a costume of Socrates. It is one question, asked after a practice you already attended, about a word two people are using as if it meant the same thing. Often it does not. One person means “in the game I just watched.” Another means “this season, in my head.” A third, quieter meaning is “I want it to be true.” Meaning first. Argument second.

Chapter 1 gave you a sentence you can keep: deciding what to believe or do, with reasons, after a pause — and doing justice to a challenge. This chapter gives you the teachable object at eleven to fifteen. It is not a general faculty you install. It is a small set of named social-cognitive moves, practiced on material the adolescent already somewhat knows.

The five that scale from the younger book, named here, not reprinted as a lesson bank:

1. **Wait.**
2. **What do you mean?**
3. **How do you know?**
4. **What else could be true?**
5. **How could we check?**

The four this book adds, because a page, a table, and another person can now bear them:

6. **Two-source** — “What’s a second place we could look?”
7. **Graph** — “What does this graph actually show?”
8. **Counterexample** — “Always? Can we think of a time it wasn’t?”
9. **Steelman** — “What’s the strongest version of what they mean?”

One good question beats five. If you stack them, the student starts guessing what you want. If you skip the wait, you skip the thought. In the English philosophy-for-children efficacy trial, observers already noted the practical version of that: when thinking time was skipped, children struggled to form interesting questions.⁵⁰ Skip

⁵⁰Stephen Gorard, Nadia Siddiqui, and Beng Huat See, *Philosophy for Children: Evaluation Report and Executive Summary* (Education Endowment Foundation, June 2015), ERIC ED581147. Efficacy trial, 48 English primary schools, SAPERE. Process evaluation: if thinking time was skipped, children struggled to form interesting questions. Years 4–6 / KS2; English Year 6 is about

the wait, skip the thought.

Implicit hope that “we value thinking” will not do. Improvement cannot be a matter of implicit expectation. That finding comes from a mixed-age research literature, not from a kitchen trial. The principle still disciplines a table. If you want the student to ask for a reason, you have to ask for a reason, often, out loud.⁵¹

Hearing a wrong reason, then asking a better question, then naming a better reason or a fact if needed, is teaching. “Never correct” is not this book’s rule, and it is not a finding. Silence in the face of a false reason leaves the student with the error. Hearing is not endorsing. Correcting the *reason* is not shutting the adolescent down.

What this idea unlocks is the rest of the week. Without wait, the talk is a quiz. Without meaning, you argue with a word they did not mean. Without how-do-you-know, a good story about *why* wears the clothes of a look. Without what-else, one picture freezes. Without a check, a fluent sentence stands in for the box score. Without two-source, one speaker is treated as the world. Without the graph question, a picture of “more” wins. Without a counterexample, *always* never has to meet last week’s list. Without steelman, you knock down a weaker version than the one in the room.

You do not need to be a philosopher. You do need to close your mouth for a slow three when the shrug looks like refusal, and to hear “because we always start with X” as a starting point, not a look.

This week you can learn the five openings plus the four additions, and how to close your mouth for a slow three. Today the student can answer one “how do you know?” after a wait, name one second place to look, and say one fair version of the other side.

age 10–11, the floor of this band. Primary outcome was attainment, not a critical-thinking test. Access date for URLs in these notes: 1 September 2026.

⁵¹Philip C. Abrami et al., “Instructional Interventions Affecting Critical Thinking Skills and Dispositions: A Stage 1 Meta-Analysis,” *Review of Educational Research* 78, no. 4 (2008): 1102–1134. Improvement “cannot be a matter of implicit expectation.” Mixed-age literature. Abrami et al. (2015, *RER*): middle ages 11–15, $k = 78$, $g = 0.37$ on standardised CT tests, not kitchen talk; dialogue + authentic problems + mentoring $g = 0.57$ is 19 mixed-age studies, not this band.

For the parent: understand it yourself

Many adults feel rusty around silence. Three seconds feels long. A shrug at thirteen looks like refusal. That is ordinary. Five minutes of this section, then the warm-up at the end, is enough for tomorrow. The student still does the talking.

Everyday picture. After practice, a teammate says, “We always start with Jordan.” You want to fix it. The fix that teaches is slower than the fix that ends the noise. Ask what they mean by *always*. Then wait. Then, if you need a second move, ask how they know. Then look at one other thing: last week’s actual starting five, written down. You may still decide. They still got to mean something, give a reason, and look. That is the activity, sitting inside a claim you were going to hear anyway.

A second everyday picture, at dinner. Someone says this sauce is *best*, or the recap said *dominated*. *Best* for whom? *Dominated* how — score, time of possession, shots? Clarify before you judge. “What do you mean, *always*?” is not a trap. It is the difference between arguing with a word and finding out which picture of the word is in the room.

Precise picture. The nine moves are families, not a script you recite in order every time. Wait is the silence that makes the others audible. Meaning is sense-making before evaluation. How-do-you-know is the reason, and — more sharply at this age — the difference between a story that makes an event *plausible* and a look that it *happened*. What-else is fallibilism without “anything goes.” How-could-we-check is a path from the sentence to a box score, a window, a side of a box, a page. Two-source is a second, independent speaker, not two tabs from the same site. Graph is a claim made with ink; Chapter 5 will spend it. Counterexample breaks a universal without sliding into relativism. Steelman is the strongest fair version of what they mean — then you answer *that*.

Wait has two research names. Keep them apart.

Mary Budd Rowe watched elementary *science* lessons. Teachers typically waited less than a second after a question, and about nine-tenths of a second after a student stopped. When both waits reached three to five seconds, children talked longer, offered more speculative sentences, compared more, and asked more.⁵² That is

⁵²Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables, Their Influence on Language, Logic, and Fate Control,” paper to the National Association for Research in Science Teaching, Chicago, April 1972, ERIC ED061103. Elementary science class; typical wait about one

science class, on tape. It is not a homeschool trial of critical thinking. The portable piece is the two waits: after you ask; after they stop.

Robert Stahl later called the silence *think-time*: uninterrupted quiet so the adult and the student can finish the thought. About three seconds is a convention, not a sacrament. Imprecise questions followed by long silence increase confusion. Wait after a *clear* question.⁵³ Stahl listed eight kinds of silence. You need three of them at a kitchen table: the pause after your question; the pause *inside* the answer, so you do not cut them off; the pause after they stop, so a revision can still arrive. The others are classroom furniture. Steal the three. Leave the costume.

How-do-you-know is where Kuhn's mash walks in. A why-story — "because we wanted it more" — wearing how-do-you-know clothes. Ordinary language at your table: wanting is a why. The box score is a how. Chapter 3 will keep those questions apart on purpose. This week you only need to hear the mash, and to have a trophy-shaped look in the room — a finish line, a table, a window.

What-else and counterexample are cousins, not twins. What-else opens a second picture: the bus could be late, or you could be early. Counterexample tests a universal: "always? can we think of a time it wasn't?" Upgrade *always* to *usually* when the list says so. That is not relativism. Reasons can be better or worse.

Two-source and how-could-we-check are cousins too. A check at seven is often a look (ice, puddle). At eleven to fifteen a check can be a second, independent source. Chapter 4 owns that sitting. This week you name the opening: "What's a second place we could look?"

Steelman is parent-facing slang for dual-perspective. There is no trial titled Steelman, and this book does not pretend there is one.⁵⁴ The move is: say their claim

second after a question and 0.9 seconds after a student response; extending both to 3–5 seconds changes discourse. Not a homeschool trial and not a Cornell-test intervention. A later journal version appears in *Journal of Research in Science Teaching* (1974). Tobin (1984) is a different paper; this chapter does not mash it into Rowe 1972.

⁵³Robert J. Stahl, "Using Think-Time and Wait-Time Skillfully in the Classroom," ERIC Digest ED370885, 1994. Think-time as a later instructional construct; about three seconds as a convention, not a sacrament; eight categories of silence; written for classroom teachers generally. Imprecise questions followed by long silence increase confusion.

⁵⁴Steelman is this book's parent-facing name for dual-perspective practice as Kuhn's classroom argumentation describes it (a reason; a counter; sometimes the other person's strongest case). There is no What Works Clearinghouse intervention report titled Steelman, and no RCT under that name is used here. Shape copied; live-controversy classroom topics not copied.

in the strongest fair way, so they would nod. Then answer *that*. Inventing a better argument they did not make, then knocking it down, is not steelman. Asking what the *other person* means is a skilled, rare move. In a sixteen-session school intervention, clarifying questions about the partner barely moved.⁵⁵ You will have to ask it, often, out loud.

Wrong answers you should be able to hear

1. *A stacked quiz*. “What do you mean, and how do you know, and what else, and what’s a second source, and steelman theirs?” in one breath. The student hunts for the adult’s answer. What it usually means: you were afraid of silence. What to say: pick one. Wait. The others can wait until the next sitting.
2. *“Because we always do.” / “Because it’s fair.” / “Because it’s best.”* A small word doing all the work. What it usually means: meaning was skipped. What to say: “What do you mean, *always*?” Two pictures of the word, if you need them: always as every game this season; always as the last three I remember. Then, if needed, “How do you know?” Then last week’s list.
3. *A why-story where a look was asked for*. “We dominated because we wanted it more.” “The bus is always late because the driver doesn’t care.” A why wearing how-do-you-know clothes. What to say: “That’s a reason it *might* be. How do you know it *is*?” Then look at the box score, or at a time you wrote down.
4. *A performance of Socrates*. Five questions, a raised eyebrow, a student who has learned that the game is to guess. What it usually means: the adult is demonstrating thinking instead of making space for it. What to say: one authentic question. You do not already have the recitation answer. Then wait.
5. *A steelman that is actually a straw*. “So you think nobody else should ever start.” They did not say that. What it usually means: you built a weaker version so you could knock it down, or you think steelman means giving up your own view. What to say: “Let me say it so you would nod: you think

⁵⁵Deanna Kuhn and Wadiya Udell, “The Development of Argument Skills,” *Child Development* 74, no. 5 (2003): 1245–1260. Sixteen sessions with academically at-risk 13- to 14-year-olds. Clarify-? (questions that ask the partner to clarify) barely moved even in that dense school intervention. Asking what the *other person* means is a skilled, rare move. Counterargument frequency did move. Dense school practice, not a Sunday walk.

Jordan should start because last week they organized. Is that fair?" Then check.

A sixth you will also hear: wait-time of zero, then you fill the gap with the right answer, then you ask why they never talk. The treatment is your mouth, closed, for a slow three, twice. At this age the shrug looks like refusal. Leave it.

Five-minute parent warm-up

Do this before the lesson, with a scrap of paper, no student in the room.

Minute 1. Write the five that scale. Under them, write the four additions. Notice that wait has no question mark. It is the silence that holds the others.

Minute 2. Write today's opening: "What do you mean, *always*?" Under it, one follow-up you will actually use, not four. Count a slow three. That silence is the lesson.

Minute 3. Write a why-story: "We dominated because we wanted it more." Write the look: "The score was 2–1." Say which one answers *how do you know we dominated*?

Minute 4. Imagine the student saying "because we always start with Jordan." Decide what a stacked quiz would do. Decide what "what do you mean, *always*?" would do instead. Write one steelman so they would nod.

Minute 5. Practice the wait with the empty chair. Ask the opening. Close your mouth. Look at the scrap, not at where the face will be. Put the pencil down.

If those five minutes are fluent for you, you can hear a stacked question, a small word doing too much, a why offered as a how, and a straw offered as a steelman. That is the job.

How to teach it this week

Run the thinking hour from the front of this book. This chapter fills it with the moves. Warm-up. Short model of *one* move. Student attempt. One good question, then wait. If the reason is wrong: hear it, ask a better question, then a look or a named fact. Last thoughts: you may change your mind. Stop.

Warm-up (2–3 minutes, unaided). Yesterday's claim in one question. "What did you mean by *dominated* last time?" No device. No list of nine.

Short model (3–5 minutes). You pick *one* move to make audible. Think aloud in two lines: “I am going to ask what you mean, then I am going to wait.” Ask. Wait. Stop. You are showing the pause, not delivering a lecture titled *The Nine Moves*.

Student attempt (5–12 minutes). The student talks. You wait. Struggle before rescue: ask, wait, hint, then a short model on *your* scrap, not as their reason.

One good question. Not “give me three reasons.” One of: “What do you mean, *always*?” “How do you know?” “Always — can we think of a time it wasn’t?” “What’s a second place we could look?” “What’s the strongest version of what they mean?” Wait is the move you do not say. You do it.

Talk (3–8 minutes). One spoken sentence, or a line they write. Eleven-to-thirteen: talk, or one written line. Fourteen-to-fifteen: a short written reason plus the check, sometimes a two-sentence steelman.

Stop. While they still have a question left in them. A second sitting later in the week beats a nine-question pile-up.

Exact wording you can say. Meaning: “What do you mean, *always*?” “What do you mean, *dominated*?” “Which part?” Reason: “How do you know?” “Did you see, or did someone tell you, or do you hope so?” Alternatives: “What else could be true?” Counterexample: “Always? Can we think of a time it wasn’t?” Check: “How could we check?” Two-source: “What’s a second place we could look?” Graph: “What does this graph actually show?” Steelman: “What’s the strongest version of what they mean?” “Let me say it so you would nod.” When the reason is wrong: “I hear that. I’m not sure that reason works, because... What else could be true?” Then, if needed, the look or a named fact. When you are about to take over: “I’ll wait.”

Then wait. After you ask, a slow three. After they stop, wait again. If they are mid-reason, do not cut them off. Look at the box score, the graph, or the window, not at the student, if the silence is hard. Rowe’s windows were science class. Stahl’s think-time is classroom-origin. Use the pause. Neither is a homeschool trial.⁵⁶

Age-band moves: 11–13 / 14–15

11–13. One question per sitting is plenty on a new move. Wait is the adult’s work; do not mock slowness; do not rescue the shrug. Meaning lives in small words

⁵⁶Rowe (1972) and Stahl (1994), as in notes 52 and 53. Keep the names apart: Rowe = science-class wait; Stahl = think-time.

they already use: *always*, *dominated*, *captain*, *best*. How-do-you-know still meets the why-story mash. Counterexample is new and short: one time it wasn't. Two-source is one other page or one other look. Graph work at "what number is this bar?" Steelman is new and short — one sentence, prompted. Dual focus as a default is not a stable skill this week. You prompt it.

14–15. Same nine moves, different grain. They can hold a small word across two contexts: *always* after practice and *always* about a bus. Steelman can be two sentences. Wait can include a closed-window line after any tool. Two-source can name where two pages agree and where they don't. Graph work can be asked, sometimes, what the picture does *not* tell them. They will still mash a fluent sentence with a look, some days. They will still guess what you want if you stack questions. There is no diploma in this band.

Not a stable skill at either band: unaided far transfer of the nine moves into an unfamiliar domain; nine questions at once as "rigour"; wait as a proven engine of a thinking-test score; steelman as an unprompted habit. The moves make already-present reasoning more audible. They do not install a gym.

First try-it for the student. A real claim already in the room, no vocabulary card. Someone has said *always*. Say: "What do you mean, *always*?" Wait. If they name a feeling, they used a mood. Hear it. Ask how they know. If they say "because we always do," they used the word to prove the word. Ask: "Can we think of a time it wasn't?" Then look at last week's list if you have one. If they stare, model on a *different* small word — *dominated* versus the box score — then return to *always*.

How to fade help. First sitting: you ask, you wait, you say how *you* would check, they echo. Second: they talk, you wait, you hint ("we could look at last week"). Third: they name a meaning and a check. Fourth: a cousin of the same claim — a recap, a bus, a sibling's text — with the book closed. The names of the nine moves, if they arrive at all, arrive after the looking.

When to stop talking. When you hear yourself answering. When the sit has become a lecture titled *The Moves*. When you have stacked a second question before they finished the first. One good question beats five. Stop while they still have a look left.

Practice that actually builds learning

Blocked, for a new move. The day you introduce wait, only wait: one question, a slow three, twice. The day you introduce *always*, only meaning. Mixing too early makes the student hunt for the “right” school move instead of looking.

Mixed, for when to use it. Later the same week, *always* reappears next to a recap and a store label. Mixing is the practice of choosing: is this a meaning sitting, a how-do-you-know sitting, a second-look sitting, or a steelman sitting? You impose that mix on the week you already have.

One incorrect example to diagnose. A steelman that is actually a straw: “So you think nobody else should ever start.” Or a fluent recap with no box score: “We dominated because the recap said dominated.” Hear the straw. Hear the fluent sentence. Neither is yet the move. The repair is a better question, then last week’s list or the table, then — if needed — a named fact. Silence in the face of a false reason is not kindness.

These are illustrations, not reported families.

Named try-it: Wait drill (in-home, invisible)

Time. No extra minutes. It sits inside whatever question you were already going to ask.

Materials. None.

Safety. Do not mock slowness. Do not rescue the shrug. Do not announce “this is a wait drill.”

The fun. The adult’s mouth stays shut. A revision sometimes arrives in the second silence.

The skill. Wait after you ask. Wait after they stop. If they are mid-reason, do not cut them off. Rowe’s two waits, from science class. Stahl’s within-response pause, from classroom think-time. Use the silence. You are not replicating a study.

Say the opening you already chose. Count a slow three. Look at the object, not at the face. After they stop, wait again. If the shrug looks like refusal, leave it.

Named try-it: Meaning of a small word (in-home)

Time. Three to five minutes, at dinner or with a recap already on the table.

Materials. Food already there, or a recap, or a teammate's sentence still in the air. Do not interrogate chewing.

Safety. Curious, not courtroom. No humiliation.

The fun. Two pictures of *always* / *dominated* / *captain* / *best*. Catching that the word was doing too much.

The skill. Clarify before you judge.

Say: "What do you mean, *always*?" If they give one picture, offer a second: every game this season, or the last three you remember? Then stop, or take one follow-up, not four.

Named try-it: How-do-you-know on a sports or product claim (in-home)

Time. Five to ten minutes.

Materials. A recap versus a box score, or a review versus a spec sheet already in the house.

Safety. No humiliation of a player or a sibling who bought the thing. No body talk. No food sermon.

The fun. Catching the mash. Wanting versus the table. "Best" versus listed capacity.

The skill. How versus why. A fluent recap is not a check.

Say: "How do you know we dominated?" If they offer wanting, hear it, then the box score. If they offer "the review said best," hear it, then the spec sheet. Chapter 4 will spend two sources. This week you only need to hear testimony wearing a look.

Out-of-home cousin: after a game, not during. Same five to ten minutes in the car. No sideline interrogation.

Named try-it: Counterexample on a walk (out-of-home)

Time. Five minutes of a walk already happening.

Materials. Eyes, plus a universal the student just said (“the bus is always late”; “we always start with X”).

Safety. Roads. Ordinary looking. Not a live controversy. Not a lecture to a stranger at the stop.

The fun. Breaking *always* without a fight. Finding one time it wasn’t.

The skill. Counterexample. Upgrade to *usually* when the list says so. Not relativism.

Say: “Always? Can we think of a time it wasn’t?” Wait. If they find one, the universal is done. If they cannot, you may offer last Tuesday, then look it up later if a check is cheap. You do not have to pick a winner tonight. You also do not have to say every picture is as good as every other.

Named try-it: Two-source at the store (out-of-home)

Time. Three to eight minutes in a shop you were already in.

Materials. One package, or two labels. Turn the box.

Safety. Aisle courtesy. No lecture to a stranger’s child. No shoplifting a “test.” No gotcha against a shop. No body talk. No food sermon.

The fun. Turning the box. Front versus side. Two speakers, cheap.

The skill. Leave the front. Look at the side. A second speaker is a check. How-could-we-check scaled to a label.

Say: “What’s a second place we could look?” The side of the box is a second place. Another package is a second place. The front’s “best” is one speaker with a job.

In-home cousin: two labels already bought. Same three to eight minutes at the counter.

Named try-it: Steelman a sibling or a text (in-home, with a practice-after cousin)

Time. Five to ten minutes.

Materials. The disputed claim — a sibling’s sentence, a texted claim, a teammate’s “we always start with X.”

Safety. No audience of neighbours. No humiliation. If the stakes are too hot, postpone and pick a smaller claim.

The fun. Saying it so they would nod. Being heard, then checking.

The skill. Dual-perspective, then a look. Steelman is not giving up.

Say: “Let me say it so you would nod: you think X because Y. Is that fair?” Wait. If they correct you, take the correction. Then: “How do you know?” or “What’s a second place we could look?” Inventing a better argument they did not make, then knocking it down, is not the move.

Out-of-home cousin: after practice, not during. Steelman “we always start with X.” Then last week’s list.

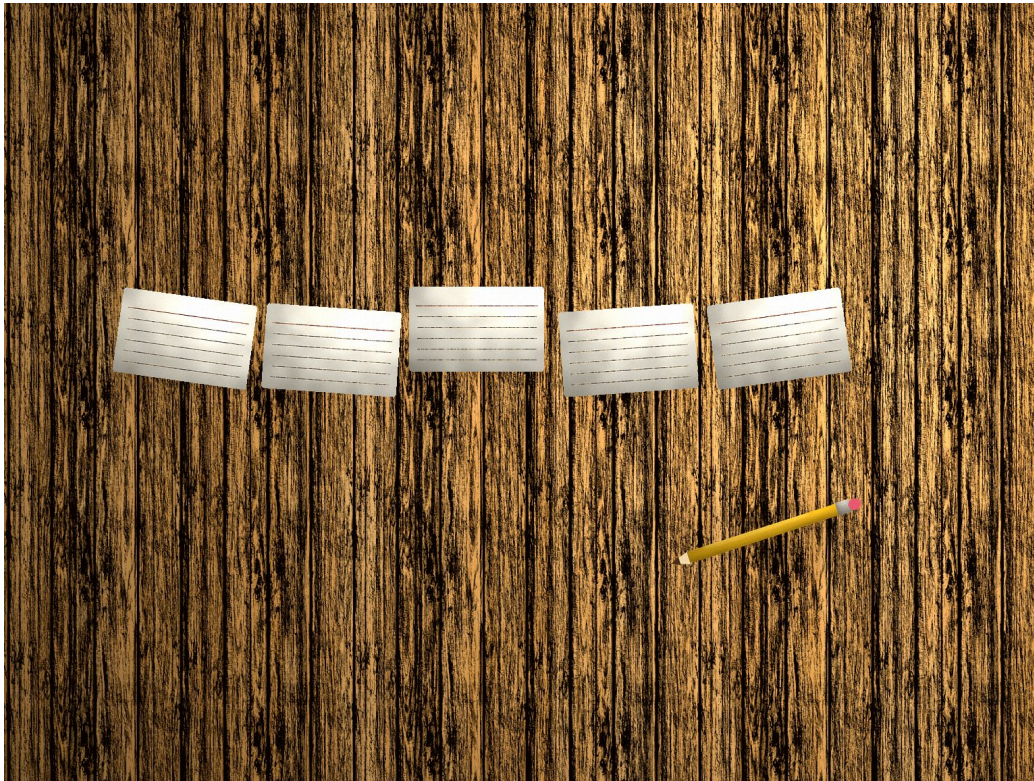


Figure 6: Nine small objects on a table, not a branded wheel: an unbranded timer, a speech-shaped card, a greeked box score, a forked path, a second book, a simple rainfall bar, a torn paper strip, and two facing empty chairs. No people. No logos. No readable UI.

Talk box

This is an illustration, not a reported family. Someone has said the bus is always late, or the team always starts with Jordan. The parent has not announced a list of nine.

Opening question

“What do you mean, *always*?”

Not: “Give me three reasons.”

Follow-ups (pick three to five; you will not use all of them every sitting)

1. How do you know?
2. Always — can we think of a time it wasn't?
3. What's a second place we could look?
4. What's the strongest version of what they mean?
5. You may change your mind.

How to wait

Ask. Count a slow three in your head. Look at the list, the box score, or the window, not at the student's face, if the silence is hard. After they stop talking, wait again before you speak. If they are mid-reason, do not cut them off. At this age the shrug often looks like refusal. Leave it. Three seconds is a convention, not a sacrament — Stahl's think-time, labelled classroom-origin. Rowe's windows were science class. Use the pause. Neither is a homeschool trial of critical thinking.

What a stuck silence usually means

The question was stacked, and they are guessing the adult's answer. Or they offered a why-story where a look was asked for. Or they think steelman means giving up. Or wait-time after the question was zero. Or they think "critical" means finding fault. Or they are searching for a word. Or the question was a recitation item in disguise. Next move: smaller question, wait, point back at the object. "Last week's list?" is a hint. The finished verdict is not a hint; it is the grab. Done enough this week: a spoken sentence after a wait, one second place named, one fair version of the other side.

For the student

This page is for you.

You already think. This chapter names the moves you can practice on things you already know — a recap, a bus, a teammate's *always*, a box in a shop.

The five that scale: wait; what do you mean; how do you know; what else could be true; how could we check.

The four this book adds: what's a second place we could look; what does this graph actually show; always — can we think of a time it wasn't; what's the strongest version of what they mean.

One good question is enough. You do not have to answer five. Your grown-up should wait. You may take the slow three. A shrug is allowed. Filling it with a guess is not required.

A tiny worked example

Someone says: “We always start with Jordan.”

You want that to be true, or you don’t.

Wanting is not how you know.

Ask, or hear: “What do you mean, *always*?”

Then look at last week’s list.

Last week it was not Jordan.

You can say: “I thought always. We looked. Not last week.”

You can also say their side so they would nod: “You think Jordan should start because they organized last week.” Then check. Saying it fairly is not giving up.

Two tries

1. After a wait, answer one “how do you know?” about a recap, a bus, or a product already in the house. Name the look, not the hope.
2. Name one second place to look, and say one fair version of the other side so they would nod. Then look.

Write a line if writing is easy: “They said . ***I think they mean*** . We looked at ____.”
Talk the sentence if writing fights the sitting.

Explain it back

Tell someone at the table, in your own words, what *always* was being asked to mean. Then say how you know. Then say a time it wasn’t. Then say their side fairly.

Challenge

Some people stack five questions and call it thinking. Some people say “always” and never look at last week. Some people knock down a weaker version than the one in the room. What would those three moves mean? How do you wait, ask what they mean, and look at one other thing?

You are allowed to struggle. You may use a recap, a walk, a box. You talk. You look. If you get stuck, ask for a hint — not the finished verdict.

A picture a computer made of nine icons is a scene. It is not the wait.

If it isn't clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent, and none of them is a reason to wait for a birthday.

1. The shrug looks like refusal, and the adult fills it.

Wait-time after the question was zero, or the question was stacked. Next move: one question. A slow three, twice. Look at the object, not at the face. Do not rescue the shrug. If this is still the bottleneck after several weeks of short sits, stay on wait. The other eight will not hold on top of a quiz. A human who will sit with a list and wait, not a tablet that narrates the answer, is a reasonable next step if you have tried the invisible drill and the fill is still the whole hour.

2. A small word is doing all the work, or a why-story is wearing how-do-you-know clothes.

“Always.” “Fair.” “Best.” “Because we wanted it more.” Next move: meaning first. “What do you mean, *always*?” Then one look — last week’s list, the box score, the side of the box. After an attempt, one incorrect example (“this person said always and never looked — what did they use?”). Slow down the nine-move talk until a sentence can be tied to a look. Go ahead once they can mean a word, give a how, and name a time it wasn’t.

3. Steelman is taken as giving up, or as a straw.

“If I say theirs, I lose.” Or: “So you think nobody else should ever start.” Next move: smaller claim. One sentence so they would nod. Ask “is that fair?” Take the correction. Then look. Steelman is not a personality of niceness and not a surrender. A tutor is useful if the hour has become a fight after a couple of weeks of daily short sits *and* the straw is still the whole move.

When to slow down. Stacked questions. Wait of zero. Why-stories still wearing reason-clothes. Straw offered as steelman. “Critical” still meaning fault. Those are brakes. “Not ready” because of age is the brake this book will not use.

When to go ahead. The student can answer one how-do-you-know after a wait. They can name one second place to look. They can say one fair version of the other side. A counterexample has broken one *always*. Short sits are ordinary. Then Chapter 3 has somewhere to sit. Being “good at arguing” is not a reason to skip the wait.

When to get a human tutor. You have run the wait, or the small word, or the steelman, for a stretch of daily sittings, and the same diagnosis is still the one in the room, and the hour has become a fight. A tutor is a release valve, not a failure of the sitting. Keep yourself as the person who can still hear a stacked quiz, a why-story, and a straw.

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The short version: the student talks and looks first. A tool may explain today’s move *to you*, suggest extra questions you then vet, write a short SCRIPT for *you* to say after the student has tried, offer a hint after an attempt, or help you diagnose a reason the student already gave.

Leave these out of the hour: a chatbot as the only partner; a tool that writes the student’s reason, including a model-written steelman pasted as theirs; a pretend expert; a detector score; a certificate of thinking; a tool asked to invent last week’s starting five. Ages eleven to twelve: scripts and parent–child talk, not live open chat. Ages thirteen to fifteen: you still hold the account. Still no unsupervised chatbot as the only partner.

A language model will happily finish the nine moves in order. Treat every model-supplied “as we saw” as untrusted until it lives in last week’s list or in a named page. Fluent talk from a tool is performance, not the student’s check. If the tool produces the steelman, the student is a spectator.

Wait, a list, and a second page are tools too. Use them, then fade them.

What “done enough” looks like

Placement is by skill, not birthday. A “grade 7 critical thinking workbook” is a publisher’s scope, not a legal grade, and not a transcript line. The record, when you need one, is a dated notebook plus, when ready, a short written reason plus the check. The title a stranger can read is still English, or Science. It is not Critical Thinking I.

Checklist before moving on

- You can name the five that scale and the four this book adds, in ordinary language, without a branded wheel.
- You can close your mouth for a slow three when the shrug looks like refusal.
- You can hear a stacked quiz, a small word doing too much, a why-story offered as a look, and a straw offered as a steelman.
- The student can answer one “how do you know?” after a wait.
- The student can name one second place to look.
- The student can say one fair version of the other side so the other person would nod.
- At least one *always* has met a counterexample, or last week’s list.
- Sits can be short. One good question beat five. You did not reprint a younger lesson bank, and you did not require a diploma sentence.

If most of that list is true, go on to something to think about, even if the birthday says otherwise. If the birthday says “ninth grade” and the wait is still zero, stay. The next chapter puts a text, a graph, and a walk on the table, and keeps “how do you know it happened?” apart from “why might it have happened?”

A path through ordinary challenges is the promise. A diploma is not.

Chapter 3

Something to think about



Figure 7: A table still-life from a high three-quarter view: a recap paragraph as an object with greeked type, a kitchen gadget such as a whisk, a homework graph face-down, and a puddle seen from above on a dark path. No people. No logos. No readable UI.

Why this matters

How do you know it happened?

Then, later, separately: Why might it have happened?

Those are not the same question. They feel the same in the mouth. They are not the same in the mind. The first asks for a look — a box score, a wet sleeve, a date on a second page. The second asks for a story that would make the event plausible — wanting it more, a puddle, a late bus. Young adolescents mash them. Adults mash them too, in other rooms. This chapter keeps them apart on purpose.⁵⁷

Chapter 2 named the moves. Moves without something to think about will not implement. Daniel Willingham's constraint is the design rule for this week: you can teach a maxim about how to think; without background knowledge and practice, the student probably cannot put the maxim to work.⁵⁸ "Look from more than one side" is empty if they do not know much about the thing on the table. The content this week is a text, a graph, a walk — domains the student already somewhat knows. Not a news cycle. Not a science year.

This is not a science book. We borrow one household fact: people already know a great deal about ordinary objects, and a false sentence is often a prior idea doing work, not an absence of thought. We do not start DNA. We do not hang a method poster. A kitchen fair test — change one thing, look — lives mainly in Chapter 6, and it will be labelled scientific reasoning, not generic critical thinking. Two-source lives mainly in Chapter 4. Graphs live mainly in Chapter 5. This chapter owns the *something*: the stimulus, and the knowledge the stimulus needs.

Picture books are no longer the centre. A novel, a homework sheet, a recipe, a box score, and a friend's texted claim are. The younger book practiced on a swing, a cereal box, a park sign. Same family of moves. Different object. Do not open that

⁵⁷Deanna Kuhn, "How Do People Know?," *Psychological Science* 12, no. 1 (2001): 1–8. Young children have difficulty differentiating explanation of why a claim makes sense from evidence that the claim is true; the distinction progresses, "but substantial variation remains among adults." Access date for URLs in these notes: 1 September 2026.

⁵⁸Daniel T. Willingham, "Critical Thinking: Why Is It So Hard to Teach?," *American Educator* (Summer 2007). You can teach maxims about how students ought to think, but without background knowledge and practice they probably will not implement the advice. AFT PDF, https://www.aft.org/sites/default/files/media/2014/Crit_Thinking.pdf. Daniel T. Willingham, "How to Teach Critical Thinking," NSW Department of Education occasional paper (2019): generic programs limited success; transfer absent, modest, or quick to fade.

lesson bank this week.

What this idea unlocks is every later sitting. Without a thing on the table, “how do you know” becomes a personality quiz. Without keeping how and why apart, a good story wins. Without noticing who was in a position to know, volume of voice wins. Knowledge first, scaled to a recap, a whisk, a puddle, a walk.

You do not need to be a scientist. You do need to hear a maxim die when there is nothing on the table, and to hear “because we wanted it more” as a why when you asked how.

This week you can learn how a maxim dies without a thing on the table, and how to keep “how do you know” from collapsing into “why might it be.” Today the student can look at one text or one object, answer how they know, then — separately — why it might be.

For the parent: understand it yourself

Many adults feel rusty around the word *knowledge* when the work is a thinking hour, not a content hour. That is ordinary. Knowledge here is not a syllabus. It is what the student already somewhat knows: this kitchen, this team, this page, this walk. Five minutes of this section, then the warm-up at the end, is enough for tomorrow. The student still does the talking.

Everyday picture. A recap paragraph on the table. Last picture: a score. You ask, first, “How do you know it happened?” The look is the score, the minutes, the table. Then you wait. Then, later, not in the same breath, “Why might it have happened?” Now a story is allowed: wanting it more, a lucky bounce, a tired opponent. If the student answers the first question with wanting, they gave you a why. Hear it. Point at the score. The story can wait.

A second everyday picture, in the kitchen. A whisk, or a gadget already bought. If the student does not know what it is for, “how do you know it mixes” is an unfair question. Teach the bit you need — “this is for mixing” — then ask how we know it was used: batter on the wires, a bowl beside it. Knowledge first. Then the move.

Precise picture. Write two columns on a scrap: *How do we know it happened?* and *Why might it have happened?* The first column is evidence that an event occurred. The second is a theory that makes the event plausible. Kuhn’s line, in ordinary language: young people often put column two in column one. The

distinction progresses. Substantial variation remains among adults. They are not being asked, in that work, for a full causal experiment about *why*. More complex confusions stay common in older children and in adults.⁵⁹ A good box-score sitting is not scientific method.

Willingham's analog is the second precise mark, and it is not an eleven-to-fifteen study. Students solved a garden problem. Minutes later they met a band-marching problem with the same deep structure. Few — just 19 percent — saw the analog. A hint that the new problem was like the earlier one raised solution only to 35 percent.⁶⁰ Surface captures attention. Deep structure is visible only after knowledge and practice, and even then a hint often still has to name the cousin. You will cue “this is like the recap” more than once. A successfully coached near analog is not evidence that a general faculty has been installed. Near is not far. This book does not print older analog-percentages from other papers as if they were kitchen results.

Ground rules for talk are portable manners, not a thinking inventory. From classroom work with nine- and ten-year-olds on exploratory talk, a family can steal four lines without stealing a test-score promise: we listen; we give reasons; we can change our minds; we ask.⁶¹ Accountable talk, in the classroom language, has three accountabilities: to the people in the room, to reasoning, and to *knowledge* — to what is so.⁶² The third is the one kitchen slogans drop. You are accountable

⁵⁹Kuhn, “How Do People Know?” (2001), as in note 57. Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1 (2000): 113–129. Increasing cognitive control over the coordination of theory and evidence may not develop fully even by adulthood; more complex confusions remain common in older children, adolescents, and adults. Used here for the how/why gap, not as a science-fair unit.

⁶⁰Willingham, “Critical Thinking” (2007): band-marching word problem isomorphic to a garden / least-common-multiple problem; 19 percent saw the analog; a hint raised solution only to 35 percent. A word-problem study, not an 11–15 finding. Gick and Holyoak (1980) analogical problem solving: publisher abstract opened 1 September 2026; page-level percentages from the five experiments not independently verified in this project's fetch and are not printed here. The noticing problem is the finding used: a hint often still has to name the cousin.

⁶¹Neil Mercer, Rupert Wegerif, and Lyn Dawes, “Children's Talk and the Development of Reasoning in the Classroom,” *British Educational Research Journal* 25, no. 1 (1999): 95–111. Exploratory-talk ground rules with ages 9–10. Portable manners (we listen; we give reasons; we can change our minds), not a critical-thinking inventory and not a Raven-gain promise for a fourteen-year-old.

⁶²Accountable Talk's three accountabilities — to the learning community, to standards of reasoning, and to knowledge — as used in classroom language. The third (accountability to what is so) is the one parent slogans drop. School programme at or below the floor of this band; steal the

to the score, not only to taking turns speaking about it. Posting four lines on a fridge is not practice. Practice is the next text.

A fair test — change one thing, keep the rest the same, look — is a *check type*. It is scientific reasoning, with its own evidence, and it belongs in the kitchen chapter.⁶³ This week, if a check is cheap, do a look. Leave the year of experiments for Chapter 6.

Just wondering is not enough. Wonder without knowledge is a maxim with nothing to bite. A museum can be a thinking hour if you pick **one** object, one label, one question. It is not a franchise. It is not this chapter's main try-it. A walk you were taking anyway is. A graph without domain knowledge is not yet "read beyond the data." That sitting belongs in Chapter 5, once rainfall is a thing they know a little.⁶⁴

Who was in a position to know is not volume of voice. Young adolescents already weigh speakers. In tasks with an objectively better answer, they have weighted adults at least as much as peers, and often more.⁶⁵ The homeschool move is selective trust by domain and by position to know, not "trust adults, ignore friends"

third accountability, not a test-score promise.

⁶³Chen and Klahr (1999) control-of-variables training, ages 7–10, and Schwichow, Croker, Zimmerman, Höffler, and Härtig (2016), mean $g = 0.61$ on scientific reasoning after excluding outliers, belong as *check types* pointed at Chapter 6. They are scientific reasoning, not generic critical thinking, and not this week's sitting.

⁶⁴Susan N. Friel, Frances R. Curcio, and George W. Bright, "Making Sense of Graphs: Critical Factors Influencing Comprehension and Instructional Implications," *Journal for Research in Mathematics Education* 32, no. 2 (2001): 124–158. "Read beyond the data" requires prior knowledge related to the graph. Willingham's knowledge constraint inside a maths paper. Graph sittings belong mainly in Chapter 5; object of practice there is a rainfall graph.

⁶⁵Young adolescents already weigh speakers. Frederico S. Lourenco, Johannes H. Decker, Gloria A. Pedersen, Danielle V. Dellarco, B. J. Casey, and Catherine A. Hartley, "Consider the Source: Adolescents and Adults Similarly Follow Older Adult Advice More than Peer Advice," *PLOS ONE* (2015): 20 adolescents (ages 12–17, mean 14.8) and 25 adults; no evident influence of peer advice on adolescent choices in a probabilistic-learning task; both groups biased toward older-adult advice. Lucas Molleman, Patricia Kanngiesser, and Wouter van den Bos, "Social information use in adolescents: The impact of adults, peers and household composition," *PLOS ONE* (2019), $N = 256$, ages 11–15: mean adjustment toward an adult 47.5 percent, toward a peer 43.7 percent. Selective trust is domain-sensitive, not a teenage-peer override. Shiri Einav, Alexandria Levey, Priya Patel, and Abigail Westwood, "Epistemic vigilance online," *British Journal of Developmental Psychology* (2020), and Pip Brown and Michaela Gummerum, "Trust issues: Adolescents' epistemic vigilance towards online sources," *British Journal of Developmental Psychology* (2025): look still outruns meaning on a page; their science/health pages are research objects, not this book's teaching objects. Translate to a recap, a list, two storm pages.

and not “the teen years mean peers win.” Who saw the match? Who read the box? Who is guessing?

Wrong answers you should be able to hear

1. *How and why collapse.* “How do you know we dominated?” “Because we wanted it more.” A story in the how-column. What it usually means: the mash is in the room, which is ordinary. What to say: “That’s a why. How do you know it *did* happen?” Point at the score. Later, separately, you may ask why.
2. *A maxim with no object.* “Let’s think critically about this.” Nothing on the table. Or an object the student does not know at all, and no bit of teaching first. What it usually means: coverage of a method won. What to say: put a recap, a whisk, or a walk down. Teach the bit they need. Then ask.
3. *Volume of voice as knowledge.* The loudest person was at practice, so they must know who started. What it usually means: source was skipped. What to say: “Who saw?” Who was in a position to know is not the same as who is sure. Take a previously accurate speaker seriously. Still look at the list if a look is cheap.
4. *“Anything could be true, so we stop.”* What-else without a check, frozen as relativism. What it usually means: alternatives were treated as a truce. What to say: “What else could it be? How could we tell?” Reasons can be better or worse. You are accountable to what is so.
5. *A science year in disguise.* DNA, a method poster, a fair-test lecture, because a science paper was opened for the “people already think” sentence. What it usually means: the wrong book arrived. What to say: this is a text, an object, a walk. The ice cubes can wait for Chapter 6.

A sixth you will also hear: “this is like last time” said by you, once, as if the hint installed transfer. Cue the cousin. A coached analog is not a general faculty.

Five-minute parent warm-up

Do this before the lesson, with one text or one object and a scrap of paper, no student in the room.

Minute 1. Put the thing on the table. Name the bit of knowledge the student will need. If you cannot name it, this is not yet a thinking sitting. Teach the bit first, or pick a more known thing.

Minute 2. Write the two questions on the scrap, on two lines, with a gap between them: “How do you know it happened?” Then a blank line. Then “Why might it have happened?” The gap is the lesson.

Minute 3. Fill column one for your object (the look). Fill column two (a plausible why). Practice hearing a column-two answer to a column-one question.

Minute 4. Imagine the student does not know what the object is for. Decide what a maxim would do. Decide what one sentence of teaching, then a look, would do instead.

Minute 5. Write the sentence you will actually say first. Only the how. Put the pencil down. The why waits.

If those five minutes are fluent for you, you can hear a mash, a maxim with no object, and a loud voice standing in for a look. That is the job.

How to teach it this week

Run the thinking hour from the front of this book. This chapter fills it with a something. Warm-up on a known thing. Short model of the two questions, kept apart. Student looking and talking. One good question, then wait. If how and why collapse, hear it, point at the look, save why for later. Stop.

Warm-up (2–3 minutes, unaided). Yesterday’s object or text. “How did we know?” No why yet. No device.

Short model (3–5 minutes). One pictured or reported event, or one object. You answer how *you* know, in two lines, pointing. Then you stop. The why, if it comes, comes after a wait and a change of question, not as a repair of the first silence.

Student attempt (5–12 minutes). The student looks. The student talks. You wait. Struggle before rescue: ask, wait, hint (“point at the score”), then a short model on *your* scrap.

One good question. Not “what is evidence?” First: “How do you know it happened?” Later, separately: “Why might it have happened?”

Talk (3–8 minutes). One spoken sentence, or a line they write that keeps the two columns apart. Eleven-to-thirteen: talk the how, then, later, the why. Fourteen-to-fifteen: a short written how, then a separate why, sources named if a page was

used.

Stop. While they still have a look left in them. A second sitting later in the week beats a how-and-why pile-up.

Exact wording you can say. First sitting: “How do you know it happened?” “What did you see?” “What were you told?” “What do you hope? Can those be different?” Later, a different breath: “Why might it have happened?” “What’s a second place we could look?” When they collapse the two: “That’s a why. How do you know it *did*?” Point at the object. When you are about to take over: “I’ll wait.”

Then wait. After you ask, a slow three. After they stop, wait again. Look at the object, not at the student, if the silence is hard. At this age the shrug often looks like refusal. Leave it. Stahl’s think-time, labelled classroom-origin. Rowe’s windows were science class. Use the pause.

Age-band moves: 11–13 / 14–15

11–13. The something is near and known: a recap they heard, a gadget they have used, a walk they are already on. How-do-you-know is a look they can point at. Why waits until the how is named. Who-was-in-a-position-to-know is one speaker they can name. Graph work, if a homework sheet is already assigned, stays at “what number is this?” Read-beyond waits for Chapter 5 and for knowledge of the content. Speech is talk, or one written line. You prompt the gap between how and why.

14–15. Same two questions, different grain. They can hold a short written how, then a separate why. They can name who saw, who was told, and who hoped, as three different columns. They can be asked, on a known graph, what the picture does not tell them — still not a statistics course. They still mash, some days. They still need the bit of knowledge first if the object is new. There is no diploma in this band, and no scientific method they now “have.”

Not a stable skill at either band: unaided far transfer from a coached analog; how and why kept apart as a default with no prompt; read-beyond on a graph whose content they do not know. Same faculty. Different grain.

First try-it for the student. One recap paragraph, or one short article about a storm or a date, already in the house. Say: “How do you know it happened?” Wait. If they name a why, they used column two. Hear it. Point at the look. Later,

a different breath: “Why might it have happened?” If they stare, the object may be unknown. Teach the bit. Then ask again.

How to fade help. First sitting: you point at the look, you say how you know, they echo. Second: they point, you wait, you hint (“the score is here”). Third: they name the how, then, separately, a why. Fourth: a cousin — a whisk, a walk — with the book closed. The word *evidence*, if it arrives at all, arrives after the pointing.

When to stop talking. When you hear yourself answering both questions at once. When the sit has become a lecture titled *Theory and Evidence*. When you have asked why as a repair of a silence that belonged to how. One good question beats two in the same breath. Stop while they still have a look left.

Practice that actually builds learning

Blocked, for a new move. The day you introduce the gap, give a short set that is only how: the recap, the score, the pointing. Why waits until a later sitting, or until the how is named out loud.

Mixed, for when to use it. Later the same week, a text reappears next to a whisk and a walk. Mixing is the practice of choosing: is this a how sitting, a why sitting, a who-saw sitting, or a “we do not know enough yet” sitting? You impose that mix on the week you already have.

One incorrect example to diagnose. A why-story offered as evidence: “How do you know it rained?” “Because the sky looked like rain last night.” Hear the story. Last night’s look is not this morning’s puddle. The repair is a better question, then the wet, then — if needed — a named fact. Silence in the face of a collapsed column is not kindness.

These are illustrations, not reported families.

Named try-it: Two texts, two questions (in-home)

Time. Eight to fifteen minutes.

Materials. One pictured or reported event: a recap paragraph, a short article about a storm or a date, a homework passage. Skip live-controversy pages.

Safety. Ordinary reading. If the page is a live fight, close it and pick a storm, a date, or a game.

The fun. Being a detective of *that* versus *why*. Catching the mash.

The skill. Kuhn's how-versus-why, kept apart.

Say: "How do you know it happened?" Wait. Point at the sentence or the score that would show it. Then, later: "Why might it have happened?" Keep the answers from collapsing. Name both if you used a second page. You do not have to pick a team.

Out-of-home cousin: two library books on one animal or one storm. Ten to twenty minutes. Same two questions. Chapter 4 will spend two sources as the centre. This week the something is the point.

Named try-it: Object you can hold (in-home)

Time. Five to ten minutes.

Materials. One kitchen gadget, a product already bought, a spec sheet if you have one.

Safety. No tasting unknown things. Pinch warning for magnets. No flame for anyone who cannot already cook. No body talk.

The fun. "What is it for?" Then how we know it was used.

The skill. Knowledge first — teach the bit you need, then ask how we know.

Say what it is for, in one sentence, if they do not know. Then: "How do you know it was used?" Batter on the wires is a look. "Because it mixes well" is a why. Hear the why. Point at the batter. Later, separately, why it might have been left out.

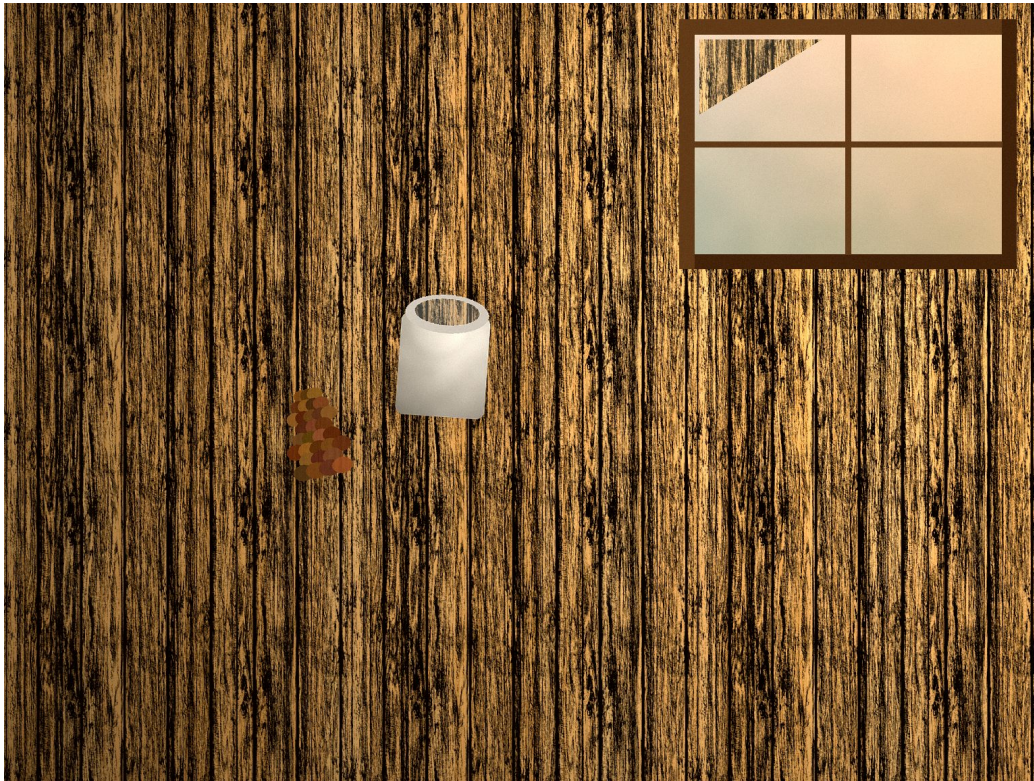


Figure 8: A kitchen gadget on a table — a whisk or similar — with a little batter on the wires, a generic spec sheet with unreadable type, no package branding, no people.

Named try-it: Walk noticing (out-of-home)

Time. Five to twenty minutes of a walk already happening.

Materials. Eyes. Optional notebook mark. Optional forecast.

Safety. Roads, water, unknown plants, other people's dogs. Noticing is not foraging school. Not Forest School. Not a climate-policy seminar.

The fun. Stopping. Naming one thing. Being right or changing your mind about the sky.

The skill. Notice, name, criteria (“how do you know it’s a...?”), else, cheap check (forecast versus sky).

Say: “What do you notice?” Then: “How do you know?” If they say puddle, ask how they know it is water, not a shadow. If a forecast is in the pocket, look at the sky. Repeat the check — the sky — not the caption. Come back if you want a second look.

Named try-it: Who was in a position to know (in-home, with a practice-after cousin)

Time. Three to eight minutes.

Materials. A disputed object or a disputed game memory. Last week’s list if you have it.

Safety. No blame ritual. No humiliation. No sideline interrogation during a game.

The fun. Being the one who saw. Catching that volume is not position.

The skill. Source, not volume of voice. Selective trust by domain and by position to know — not a teenage-peer override, and not “trust adults, ignore friends.”

Say: “Who saw?” Then: “Who was told?” Then: “Who is hoping?” Can those be different? Take the person who saw seriously. Still look at the list if a look is cheap.

Out-of-home cousin: after practice, not during. Who saw the starting five? Who is repeating a recap? The list is the look.

Talk box

This is an illustration, not a reported family. A recap is on the table, or a puddle is on the path. The parent has not announced the word *evidence*.

Opening question

“How do you know it happened?”

Then, later, separately: “Why might it have happened?”

Not: “What is evidence?”

Follow-ups (pick three to five; you will not use all of them every sitting)

1. What did you see?
2. What were you told?
3. What do you hope? Can those be different?
4. What’s a second place we could look?
5. You may change your mind.

How to wait

Ask the how. Count a slow three. Look at the object, not at the face. After they stop, wait again. Do not repair a how-silence with a why. The why is a new question, later. At this age the shrug often looks like refusal. Leave it. Stahl’s think-time, labelled classroom-origin. Rowe’s windows were science class.

What a stuck silence usually means

They collapsed how and why, and they can feel the mismatch. Or they do not know enough about the object to think, and a maxim is being asked of an empty table. Or the question was a recitation item in disguise. Or wait-time after the question was zero. Or they are guessing what you want. Next move: smaller question, teach the bit they need, point back at the object. “The score is here” is a hint. The finished why is not a hint; it is the grab. Done enough this week: a spoken how, then, separately, a why.

For the student

This page is for you.

You already think about things you know. A maxim with nothing on the table will not help. Put a recap, a whisk, or a puddle down. Then ask how you know. Then, later, why it might be. Those are two jobs. They feel the same. They are not.

A tiny worked example

There is a recap on the table.

Someone says the team won.

You want that to be true.

Wanting is a why.

The score is how you know it happened — or did not.

You look.

You can say: “I know it happened because the score says 2–1. Why it might have happened is a different question. Maybe they wanted it. Maybe the other team was tired. I can say those later.”

That is the whole trick for today. Keep the two sentences apart.

Two tries

1. Look at one real text — a recap, a short article about a storm or a date, a homework passage. Answer how you know it happened. Point. Then, separately, say why it might have happened.
2. Hold one real object, or stop on a real walk. Say what it is for, or what you notice. Say how you know. If you do not know what it is for, ask. Then look.

Write two lines if writing is easy: “How I know: . **Why it might be:** .” Talk the sentences if writing fights the sitting.

Explain it back

Tell someone at the table, in your own words, how you know a thing happened, pointing at the look. Then, in a new sentence, why it might have happened. Then say who was in a position to know.

Challenge

Some people answer “how do you know?” with a good story. Some people ask a maxim with nothing on the table. Some people treat the loudest voice as the person who saw. What would those three moves mean? How do you put a thing down, ask how, and save why for later?

You are allowed to struggle. You may use a recap, a whisk, a walk. You look. You talk. If you get stuck, ask for a hint — not the finished why.

A picture a computer made of a whisk is a scene. It is not the whisk.

If it isn't clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent, and none of them is a reason to wait for a birthday.

1. How and why collapse, and the student cannot yet hear the difference.

“Because we wanted it more.” “Because the sky looked like rain.” A story in the how-column. Next move: smaller claim, nearer look. One recap. One question — only the how. Wait. Name the why kindly (“I hear that as a why”) and ask the how again. Point. If this is still the bottleneck after several weeks of short sits, stay here. Two-source and graphs will not hold on top of a collapsed column. A human who will sit with a score and wait, not a tablet that narrates the why, is a reasonable next step if you have tried the gap and the mash is still the whole hour.

2. A maxim with no object, or an object they do not know.

“Let’s think critically.” Nothing on the table. Or a gadget they have never used, and no bit of teaching first. Next move: put a known thing down. Teach the bit. Then ask how. After an attempt, one incorrect example (“this person asked how with nothing on the table — what was missing?”). Slow down the method talk until a sentence can be tied to a look. Go ahead once they can name a how, pointing, on a thing they know.

3. Volume of voice is standing in for who saw, or the hour has become a science year.

The loudest person “knows.” Or DNA and a method poster have arrived because a science paper was in the notes. Next move: “Who saw? Who was told? Who is hoping?” Then look at the list. Put the method poster away. This is a text, an object, a walk. If the hour has become a fight after a couple of weeks of daily short sits, a human who will wait, not a chatbot that fills both columns, is the release valve.

When to slow down. Collapsed columns. Empty table. Recitation of “evidence.” Science-year drift. Those are brakes. “Not ready” because of age is the brake this book will not use.

When to go ahead. The student can look at one text or one object, answer how they know, then — separately — why it might be. A walk has produced one notice plus one how. Who-saw has been named at least once. Short sits are ordinary.

Then Chapter 4 has somewhere to sit. Being “good at stories” is not a reason to skip the look.

When to get a human tutor. You have run the two questions, or the object, or the wait after the how, for a stretch of daily sittings, and the same diagnosis is still the one in the room, and the hour has become a fight. A tutor is a release valve, not a failure of the sitting. Keep yourself as the person who can still hear a collapsed column and a maxim with no object.

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The short version: the student talks and looks first. A tool may explain today’s idea *to you* from a named page, suggest extra questions you then vet, write a short SCRIPT for *you* to say after the student has tried, offer a hint after an attempt, or help you diagnose a reason the student already gave.

Leave these out of the hour: a chatbot as the only partner; a tool that writes the student’s how or why; a pretend expert; a detector score; a certificate of thinking; a tool asked to invent what the score was or what the whisk is for. Ages eleven to twelve: scripts and parent–child talk, not live open chat. Ages thirteen to fifteen: you still hold the account. Still no unsupervised chatbot as the only partner.

A language model will happily mash how and why in one fluent paragraph. Treat every model-supplied “as we saw” as untrusted until it lives in the object or in a named page. Fluent talk from a tool is performance, not the student’s look. If the tool produces the why as if it were the how, the student is a spectator.

A recap, a whisk, and a puddle are tools too. Use them, then fade them.

What “done enough” looks like

Placement is by skill, not birthday. A “grade 7 critical thinking workbook” is a publisher’s scope, not a legal grade, and not a transcript line. The record, when you need one, is a dated notebook plus, when ready, a short written how, then a separate why, sources named. The title a stranger can read is still English, or Science. It is not Critical Thinking I.

Checklist before moving on

- You can hear a maxim die when there is nothing on the table.
- You can keep “how do you know” from collapsing into “why might it be.”
- You can hear volume of voice standing in for who saw.
- The student can look at one text or one object, answer how they know, then — separately — why it might be.
- At least one walk has produced a notice plus a how, or a forecast has met the sky.
- At least one who-saw sitting has named position to know, without a blame ritual.
- Sits can be short. The two questions were not asked in the same breath. You did not turn the hour into a science year.

If most of that list is true, go on to two sources, even if the birthday says otherwise. If the birthday says “ninth grade” and the columns still collapse, stay. The next chapter leaves a fluent recap for a box score, and two library books for each other.

A path through ordinary challenges is the promise. A diploma is not.

Chapter 4

Two sources



Figure 9: A kitchen-table still-life from a high three-quarter view: two books face-up with unreadable spines, a recap page with greeked type, a box score with greeked numbers and no league logo, and a window showing sky. No people. No logos. No readable UI.

Why this matters

What's a second place we could look?

That is not a request for the word *corroboration*. It is not a news-literacy course for middle school. It is one question, asked of a recap already on the table, about a claim that has so far had only one speaker. The recap said *dominated*. The recap is a speaker with a job: a story. The box score is another speaker with a job: a table. Leave this page. Look at one other thing.

The younger book could ask “how could we check?” A check at seven is often a look — ice, puddle, picture. At eleven to fifteen a check can be a second, independent source. That is the historian's corroboration heuristic, scaled down and stripped of high-school civic stakes.⁶⁶ *Critical Thinking for Life* already spent lateral reading and a high-school government trial. One pointer, then we teach here. This book does not need a civic-web item as an exercise. It needs two pages, two labels, two people, two looks.

Ennis's conception already names the adult version a parent can steal: use credible sources, and notice agreement among sources. Expertise, conflict of interest, reputation, and position to observe sit on the same list. Hearsay is weaker than the observer's report.⁶⁷ You do not have to install that list as a syllabus. You do have to leave a fluent recap for a table.

Older students who stay on a finished-looking page miss who is behind it. That is why we practice leaving a recap, a spec sheet, and a storm page *now*.⁶⁸ The trans-

⁶⁶Sam Wineburg and Sarah McGrew, “Lateral Reading and the Nature of Expertise: Reading Less and Learning More When Evaluating Digital Information,” *Teachers College Record* 121, no. 11 (2019). Professional fact checkers leave an unfamiliar page; many undergraduates and historians stayed. Corroboration is the named adult heuristic. This chapter scales the *direction of attention* to a recap, a spec sheet, and two storm pages. It does not reprint *Critical Thinking for Life* Chapter 6, and it does not assign Civic Online Reasoning items. Access date for URLs in these notes: 1 September 2026.

⁶⁷Robert H. Ennis, “An Outline of Goals for a Critical Thinking Curriculum and Its Assessment,” *criticalthinking.net*, revised 18 October 2000, <https://criticalthinking.net/longdefinition/>. Ability 4 (2000 numbering) includes source credibility: expertise, conflict of interest, agreement among sources, reputation, established procedures, ability to give reasons. Ability 5: hearsay is weaker than the observer's report, plus corroboration. The 2015 PDF keeps the public sentence and the not-negative warning: Robert H. Ennis, *The Nature of Critical Thinking* (2013; last revised September 2015).

⁶⁸Joel Breakstone, Mark Smith, Sam Wineburg, Amie Rapaport, Jill Carle, Marshall Garland, and Anna Saavedra, “Students' Civic Online Reasoning: A National Portrait,” *Educational Re-*

lation of three adult questions — who’s behind this; what’s the evidence; what do other sources say — onto a recap, a spec sheet, and two storm pages is a design hypothesis, not a trial. Near transfer to another recap, another spec sheet, another storm page is the honest hope. Far transfer to civic web evaluation is an open question. Willingham predicts it will not happen without the later domain’s knowledge.⁶⁹ Practice on the known stake. Do not rehearse the later domain as content.

Two sources can disagree without anyone having to pick a team tonight. Agreement among sources is useful when it is there. Its absence is also information. Two forecasts can both be “opinions.” One of them can still be better supported by the sky. A review can say *best*. The spec sheet lists capacity. “Best” is often the reviewer’s word.

What this idea unlocks is every later sitting that used to stop at a fluent sentence. Without a second look, the recap *is* the check. Without naming who wrote it, a copyright symbol or a finished layout does the work of trust.⁷⁰ Without leaving this page, two tabs from the same site feel like two sources. A fluent sentence is not a check. Leave this page and look at one other thing.

You do not need to be a historian. You do need to leave a fluent recap for a box score, and to hear two sources disagree without forcing a team.

searcher 50, no. 7 (2021). 3,446 high-school students; 96 percent never learned a climate site’s fossil-fuel ties. Used here only as *why the habit is taught*. Those items are not assigned in this book. Wineburg et al. (2022): six ~50-minute COR lessons in a high-school government course; experimental classrooms grew on credibility tasks. Stanford GSE news (19 April 2022) is journalism: roughly doubled pre-test scores and still earned about half the possible points. There is no SHEG/COR RCT for storm-pages or recap-versus-box-score in the sources this project opened.

⁶⁹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* (Summer 2007). Thinking is intertwined with the content of thought; maxims without knowledge and practice will not implement. Far transfer of a recap-versus-box-score habit to civic web evaluation is an open question; Willingham predicts it will not, without the later domain’s knowledge. The translation of COR’s three questions (Who’s behind the information? What’s the evidence? What do other sources say?) onto a recap, a spec sheet, and two storm pages is a design hypothesis, not a trial. Civic Online Reasoning, cor.stanford.edu, fetched 1 September 2026: the construct is evaluating social and political information, from middle school to college.

⁷⁰Julie Coiro, Carla Coscarelli, Cheryl Maykel, and Elena Forzani, “Investigating criteria that seventh graders use to evaluate the quality of online information,” *Journal of Adolescent & Adult Literacy* (2015): 12- to 13-year-olds used irrelevant credibility criteria; a copyright symbol is the paper’s example. Look outruns meaning. Teach who wrote this, what would show it, and what the other page says — not the symbol.

This week you can learn how to leave a fluent recap for a box score, and that two sources can disagree without anyone having to pick a team. Today the student can name a claim, name two places that are not the same speaker repeating themselves, look, and say where they agree.

For the parent: understand it yourself

Many adults feel rusty around the word *source* when the object is a recap, not an archive. That is ordinary. A source here is a speaker: a recap, a table, a forecast, a spec sheet, a library book, a person who saw. Five minutes of this section, then the warm-up at the end, is enough for tomorrow. The student still does the talking.

Everyday picture. The recap is on the table. “We dominated.” You want to believe it, or you don’t. The move that teaches is slower than the move that ends the talk. Ask: “What’s a second place we could look?” Then wait. Then open the box score if you have one. Minutes, points, score. The recap is still allowed to be interesting. It is no longer the only speaker. If the numbers are close, the student may change the sentence. That is the work. It is not losing.

A second everyday picture, at the library. Two books on one animal, or one storm, or one historical date. The blurbs do not quite match. Steelman the first blurb so the writer would nod. Then look at the second book. Name both. Say where they agree and where they don’t. You do not have to pick a team. A first research-report grain lives here: dated notebook, short reason, sources named, check. It is not a college paper.⁷¹

Precise picture. Two-source is corroboration scaled. The adult practice is: leave an unfamiliar page and see what someone else says. This book’s practice is: leave this recap, this review, this storm page, this “the article said,” and look at one other thing that is not the same speaker repeating themselves. Two tabs from the same site are one speaker in two windows. Google’s ranking is not a trust ranking. A

⁷¹A first research-report grain, as this book’s records chapter will name it: dated notebook / short written reason plus the check, stimulus named, sources named. Not a college paper. Library use among homeschool families is common; NCES *Parent and Family Involvement in Education: 2016* (NCES 2020-001) Table 6: library as a source of curriculum and books, 66 percent overall (6th–8th 61 percent; 9th–12th 58 percent). 2023 subject tables not independently verified in this project’s fetch. NYPL mission language includes exploratory conversations — mission copy, not a philosophy-for-children trial.

copyright symbol is not a reason.⁷²

Ennis's credibility criteria, in ordinary language: who is in a position to know; who has a job that might pull the sentence; whether a second independent speaker agrees; whether the report is hearsay or an observer's. You will not recite that list. You will ask who's behind the recap (a writer with a job: a story); what would show the claim (a table, a sky, a spec sheet); what the other page says.

Look still outruns meaning on a page. Young adolescents already weigh speakers. Vigilance for a meaning-error on a finished-looking page is still arriving.⁷³ Teach "ask what they mean," "leave this page," and "look at the numbers, not only the look." Do not write a sitting that treats eleven-year-olds as credulous blank slates. Do not write a sitting that treats them as miniature fact-checkers of the live civic web.

A grade-eight history class that taught sourcing, contextualization, and corroboration moved historical-argument writing. That is history class, with school and professional development, not generic critical thinking at a kitchen table.⁷⁴ A study of sixteen- and seventeen-year-olds sits above this band. This week's object is a recap and a box score, two library books, a forecast and the sky.

⁷²Same-site tabs and ranking-as-trust are this chapter's kitchen translations of staying on a finished-looking page (Wineburg and McGrew, 2019, as in note 66). They are not a homeschool RCT.

⁷³Shiri Einav, Alexandria Levey, Priya Patel, and Abigail Westwood, "Epistemic vigilance online: Textual inaccuracy and children's selective trust in webpages," *British Journal of Developmental Psychology* (2020): 8- to 10-year-olds showed selective trust in the accurate webpage in the typos condition only, not for factual inaccuracies. Pip Brown and Michaela Gummerum, "Trust issues: Adolescents' epistemic vigilance towards online sources," *British Journal of Developmental Psychology* (2025): younger adolescents 11–16 versus older 16–20; age predicted selective trust, particularly for semantic errors; an accuracy prime did not move selective-trust scores. Their science/health pages are research objects, not this book's teaching objects. Translate to two pages about a storm, a recap versus a box score, a review versus a spec sheet.

⁷⁴Susan De La Paz, Mark Felton, Chauncey Monte-Sano, Robert Croninger, Cara Jackson, Jeevan Deogracias, and B. P. Hoffman, "A historical writing apprenticeship for adolescents: Integrating disciplinary learning with cognitive strategies," *Theory and Research in Social Education* 42, no. 1 (2014). Grade 8; disciplinary reading/writing with sourcing, contextualization, corroboration; about 0.5 SD on historical-argument writing. History class, school plus professional development, not generic critical thinking at a kitchen table. J. D. Nokes, J. A. Dole, and D. J. Hacker, "Teaching high school students to use heuristics while reading historical texts," *Journal of Educational Psychology* 99, no. 3 (2007): 492–504. Ages 16–17 — above this band. Do not cite Nokes as grade 7.

Wrong answers you should be able to hear

1. *A fluent recap offered as a check.* “We dominated because the recap said dominated.” One speaker. What it usually means: testimony is doing the work of a look. What to say: “What’s a second place we could look?” Then the box score.
2. *Two tabs from the same site, or Google’s ranking treated as trust.* What it usually means: independent was skipped. What to say: “Is that a second speaker, or the same speaker twice?” Name both. If they are the same, look again.
3. *A rant about “the media,” or a demand to pick a team.* Two sources disagree. The student wants a winner tonight. What it usually means: disagreement was treated as a fight, or as “anything goes.” What to say: “Where do they agree? Where don’t they? You do not have to pick a team.” Reasons can still be better or worse. The sky is still there.
4. *A copyright symbol, a finished layout, or a confident caption doing the work of trust.* What it usually means: look outran meaning. What to say: “Who wrote this? What would show the claim? What does the other page say?” Then look.
5. *A civic-web item assigned “because they are closer to high school.”* What it usually means: the later domain arrived as content. What to say: practice leaving a recap, a spec sheet, a storm page. The later, heavier claim will need knowledge this book is not teaching. That is Willingham, not a dodge.

A sixth you will also hear: “the article said,” offered as if the saying were the look. One named page plus a second named page is the repair. Skip live-news-cycle pages.

Five-minute parent warm-up

Do this before the lesson, with a recap and a box score — or two books, or two forecasts — and a scrap of paper, no student in the room.

Minute 1. Write the claim. Write speaker one. Write speaker two. If you cannot name a second speaker that is actually independent, this is not yet a two-source sitting. Pick a different claim.

Minute 2. Translate three questions onto your object, in ordinary words: Who wrote this? What would show the claim? What does the other page (or the table,

or the sky) say?

Minute 3. True or false, said aloud: “The recap is the check.” “Two tabs from the same site are two sources.” “If they disagree, we have to pick a team.” You are practicing the hearing, not racing.

Minute 4. Imagine the student saying “because the recap said dominated.” Decide what a rant would do. Decide what “what’s a second place we could look?” would do instead.

Minute 5. Write the sentence you will actually say: “What’s a second place we could look?” Put the pencil down. That sentence is the lesson.

If those five minutes are fluent for you, you can hear a fluent recap with no table, two tabs that are one speaker, and a disagreement treated as a fight. That is the job.

How to teach it this week

Run the thinking hour from the front of this book. This chapter fills it with a second speaker. Warm-up on a known claim. Short model of leaving one page. Student looking at two places. One good question, then wait. If they name the same speaker twice, hear it, ask again. Stop.

Warm-up (2–3 minutes, unaided). Yesterday’s claim. “How did we know?” No second source yet if last time was only a how. No device.

Short model (3–5 minutes). You leave a recap for a box score, or a forecast for the sky, in two lines. You name both speakers. Then you stop. You are showing the leave, not delivering a lecture titled *Corroboration*.

Student attempt (5–15 minutes). The student names the claim, names two places, looks. You wait. Struggle before rescue: ask, wait, hint (“the table is here”), then a short model on *your* scrap.

One good question. Not “what is corroboration?” “What’s a second place we could look?”

Talk (3–8 minutes). One spoken sentence, or a line they write: claim, two sources named, where they agree. Eleven-to-thirteen: talk, or one written line. Fourteen-to-fifteen: a short written reason plus the check, sources named.

Stop. While they still have a look left in them. A second sitting later in the week beats a three-question pile-up that turns into a rant.

Exact wording you can say. “What’s a second place we could look?” “Who wrote this?” “What would show the claim?” “What does the other page (or the table, or the sky) say?” “Where do they agree? Where don’t they?” “You do not have to pick a team.” When they name two tabs from the same site: “Is that a second speaker, or the same speaker twice?” When you are about to take over: “I’ll wait.”

Then wait. After you ask, a slow three. After they stop, wait again. Look at the box score, the second book, or the window, not at the student, if the silence is hard. At this age the shrug often looks like refusal. Leave it. Stahl’s think-time, labelled classroom-origin. Rowe’s windows were science class. Use the pause.

Age-band moves: 11–13 / 14–15

11–13. Two places they can point at: recap and box score; two books on one animal; forecast and sky; review and spec sheet. Naming both sources out loud is the win. Where they agree can be one sentence. Independent versus same-speaker-twice is new and will be missed. Look still outruns meaning: a finished page feels true. You prompt the leave. Speech is talk, or one written line.

14–15. Same leave, different grain. They can name where two pages agree and where they don’t, without picking a team. They can say who’s behind the recap (a writer with a job) and what the table’s job is. A short written reason plus the check, sources named, is the first research-report grain. They still treat a confident caption as a look, some days. They still mash two tabs into two sources. Far transfer to an unseen civic page is not a stable skill this week, and this book does not assign that page.

Not a stable skill at either band: unaided civic-web evaluation; treating Google’s ranking as trust; leaving every page without a prompt. Same faculty. Different grain.

First try-it for the student. A recap already on the table that really says *dominated* — not a cartoon conspiracy. Say: “What’s a second place we could look?” Wait. If they name the recap again, they used one speaker. Hear it. Hint: the box score, if you have one. Look. Name both. Say where they agree. If the score is close, they may change the sentence.

How to fade help. First sitting: you leave together, you name both speakers, they

echo. Second: they name a second place, you wait, you hint. Third: they look and say where the two agree. Fourth: a cousin — two books, forecast and sky — with the book closed. The word *corroboration*, if it arrives at all, arrives after the looking.

When to stop talking. When you hear yourself answering. When the sit has become a rant about “the media.” When you have assigned a civic-web item. When two sources became five questions. One good question beats three. Stop while they still have a look left.

Practice that actually builds learning

Blocked, for a new move. The day you introduce two-source, give a short set that is only that: one claim, two places, the look. Do not add steelman and graph in the same breath.

Mixed, for when to use it. Later the same week, the recap reappears next to two books and a forecast. Mixing is the practice of choosing: is this a recap-versus-table sitting, a two-book sitting, a sky sitting, or a review-versus-spec sitting? You impose that mix on the week you already have.

One incorrect example to diagnose. A fluent recap with no box score: “We dominated because the recap said dominated.” Or two tabs from the same site offered as two sources. Hear the fluent sentence. Hear the same speaker twice. The repair is a better question, then a truly second place, then — if needed — a named fact. Silence in the face of one speaker wearing two-source clothes is not kindness.

These are illustrations, not reported families.

Named try-it: Recap versus box score (in-home, with an after-game cousin)

Time. Five to fifteen minutes.

Materials. A recap — paper, a parent-opened tab, or a paragraph already read — and a box score or table of the same game. Use a real recap that really says

dominated. Greek names if you print a page for the book; at the table, use the game you watched.

Safety. No humiliation of players. No sideline interrogation during the game. No league logos in anything you print.

The fun. Catching the verb against the numbers. Being the person who finds out.

The skill. Two-source. Fluent ≠ check. Who’s behind the recap (a writer with a job: a story). What’s the evidence. What does the table say.

Say: “What’s a second place we could look?” If they look at the score and it was close, they may say the new thing. Repeat the check — the score — not the rumor in a singsong. Changing a mind when the check goes the other way is the work. It is not losing.

Out-of-home cousin: after a game, not during. Same five to fifteen minutes in the car. The game you watched is the object.

Named try-it: Two library books (out-of-home, then table)

Time. Ten to twenty minutes at the library, then the same two books on the table if you want a written line tomorrow.

Materials. Two books on one safe topic — an animal, a weather event, a historical date. Parent still picks the prompt. The student may choose among safe books.

Safety. Ordinary library rules. If the display is a live controversy, walk to a different bay. Public quiet.

The fun. Two blurbs that do not quite match. Being the person who noticed.

The skill. Two-source. Steelman the blurb so the writer would nod. Name both sources. Say where they agree and where they don’t. First research-report grain: dated notebook, short reason, sources named, check. Not a college paper.

Say: “What’s a second place we could look?” The second book is the second place. You do not have to pick a team. A library card is the low-cost path. Many families already use the library as a source of books; going on purpose is the reminder.⁷⁵

⁷⁵NCES 2020-001 Table 6, as in note 71. Table A-5 of the 2023 First Look reports a library-visit drop relative to that earlier subject table; go on purpose. New York grades 7–8 include library skills

In-home cousin: the same two books on the table tomorrow, plus a one-page reason if writing is easy.



Figure 10: Two library books face-up on a table, spines and covers unreadable as brands, a dated notebook with a blank line, no people, no logos, no readable UI.

Named try-it: Forecast versus sky (out-of-home)

Time. Three to ten minutes at the door or on a walk, then maybe later.

Materials. Two forecasts if you have them, then the actual sky.

Safety. Ordinary looking. Roads. If lightning, go in.

The fun. Being right, or changing your mind. Two captions, one sky.

on a regular basis as a statutory neighbor, still not a critical-thinking course.

The skill. Agreement among sources is absent, or present. Observation versus testimony. Fluency of a confident caption is not the forecast.

Say: “What’s a second place we could look?” The other forecast is a second speaker. The sky is another. If they disagree, you do not have to pick a team before you look out the window. Repeat the check — the sky — not the caption.

Named try-it: Review versus spec sheet (in-home, with a store cousin)

Time. Five to fifteen minutes.

Materials. A product already bought, or two packages in a shop you were already in. A review if one is already on the table. A spec sheet or the side of the box.

Safety. Aisle courtesy. No lecture to a stranger’s child. No body talk. No food sermon. No gotcha against a shop. No shoplifting a “test.”

The fun. “Best” versus listed capacity. Turning the box.

The skill. The reviewer is a speaker with a job. The spec sheet is another speaker with a job. “Best” is often the reviewer’s word.

Say: “What’s a second place we could look?” The side of the box is a second place. Another package is a second place. Who’s behind “best”? What would show the claim?

Out-of-home cousin: store-label looking. Three to eight minutes in a shop you were in. Same two-source move in the aisle.

Named try-it: “The article said” (in-home)

Time. Eight to fifteen minutes with a page you were already reading.

Materials. One short article about a date or a storm, plus a second named page — encyclopedia entry, later chapter, parent-opened source.

Safety. Skip live-news-cycle pages. Ordinary reading.

The fun. Catching the one-source fluency trap.

The skill. “The article said” is one speaker. A second named look is the check.

Say: “What’s a second place we could look?” Name both sources. Say where they agree. You do not have to pick a team.

Named try-it: Two-recipe / two-label (in-home kitchen cousin)

Time. Five to fifteen minutes.

Materials. Two cards or two packages already in the house.

Safety. No food-shaming. No body talk. Ordinary kitchen.

The fun. “Serves four” versus the tin. Two speakers you can actually check.

The skill. Two-source on a claim you can look at. Front versus side. Two recipes as two speakers.

Say: “What’s a second place we could look?” The other card, the other label, the side of the box. Chapter 6 will spend one-change as scientific reasoning. This week the claim versus the second label is enough.

Talk box

This is an illustration, not a reported family. A recap that really says *dominated* is on the table. The parent has not announced the word *corroboration*.

Opening question

“What’s a second place we could look?”

Not: “What is corroboration?”

Follow-ups (pick three to five; you will not use all of them every sitting)

1. Who wrote this?
2. What would show the claim?
3. What does the other page (or the table, or the sky) say?

4. Where do they agree? Where don't they?
5. You do not have to pick a team.

How to wait

Ask. Count a slow three. Look at the second object, not at the face. After they stop, wait again. If they are mid-reason, do not cut them off. At this age the shrug often looks like refusal. Leave it. Stahl's think-time, labelled classroom-origin. Rowe's windows were science class.

What a stuck silence usually means

They named two tabs from the same site. Or they offered a rant about "the media." Or wait-time after the question was zero. Or they treated Google's ranking as a trust ranking. Or they think two sources mean picking a team. Or they think leaving a recap means calling someone a liar. Next move: smaller question, wait, point back at the table. "The box score is here" is a hint. The finished verdict is not a hint; it is the grab. Done enough this week: a claim named, two places that are not the same speaker, a look, a sentence about where they agree.

For the student

This page is for you.

A fluent sentence is not a check. Leave this page and look at one other thing.

A recap is a speaker with a job: a story. A box score is a speaker with a job: a table. A review often says *best*. A spec sheet lists capacity. Two library books can disagree without anyone having to pick a team. Two forecasts can both be "opinions." The sky is still there.

A tiny worked example

There is a recap on the table.

It says the team dominated.

You want that to be true.

Wanting is not how you know.

You ask: "What's a second place we could look?"

You look at the box score.

The score was close.

You can say: “The recap said dominated. The table said close. I looked at both. They do not quite agree.”

You do not have to pick a team tonight. You may change the sentence. That is not losing.

Two tries

1. Name a claim already in the house — a recap, a review, an article, a forecast. Name two places that are not the same speaker repeating themselves. Look. Say where they agree.
2. At the library, pick two books on one animal or one storm. Steelman the first blurb so the writer would nod. Look at the second book. Name both. Say where they don’t match.

Write a line if writing is easy: “Claim: . **Source 1:** . Source 2: . **Where they agree:** .” Talk the sentence if writing fights the sitting.

Explain it back

Tell someone at the table, in your own words, what a second place was, and how you know the two speakers were not the same person twice. Then say one time they disagreed, and you did not have to pick a team.

Challenge

Some people treat a recap as the check. Some people open two tabs on the same site and call it two sources. Some people say “the article said” and stop. What would those three moves mean? How do you leave this page and look at one other thing?

You are allowed to struggle. You may use a recap, two books, a window. You look. You talk. If you get stuck, ask for a hint — not the finished verdict.

A picture a computer made of two books is a scene. It is not the library.

If it isn't clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent, and none of them is a reason to wait for a birthday.

1. A fluent recap is still doing the work of a check.

“Because the recap said dominated.” “Because the article said.” One speaker. Next move: smaller claim, nearer second place. One recap. One table. “What’s a second place we could look?” Wait. Name both. If this is still the bottleneck after several weeks of short sits, stay here. Graphs and disagreement will not hold on top of one speaker. A human who will sit with a box score and wait, not a tablet that narrates the leave, is a reasonable next step if you have tried the two places and the fluent sentence is still the whole hour.

2. Two tabs from the same site, or a copyright symbol, are doing the work of trust.

Independent was skipped. Look outran meaning. Next move: “Is that a second speaker, or the same speaker twice?” Who wrote this? What would show the claim? After an attempt, one incorrect example (“this person opened two tabs on the same site — how many speakers?”). Slow down the word *source* until two named, independent places can be pointed at. Go ahead once they can name two places that are not the same speaker, look, and say where they agree.

3. Disagreement becomes a rant, or a demand to pick a team, or a civic-web item arrives.

Two sources disagree and the hour becomes a fight, or a later domain arrives as content. Next move: “Where do they agree? Where don’t they? You do not have to pick a team.” Return to two labels, two books, two looks. Close the civic item. If the hour has become a fight after a couple of weeks of daily short sits, a human who will wait, not a chatbot that picks a team, is the release valve.

When to slow down. One speaker still wearing two-source clothes. Same site twice. Rants. Civic items. Those are brakes. “Not ready” because of age is the brake this book will not use.

When to go ahead. The student can name a claim, name two places that are not the same speaker, look, and say where they agree. A recap has met a box score. Two library books have sat on the table, or a forecast has met the sky. Short sits

are ordinary. Then Chapter 5 has somewhere to sit. Being “good at googling” is not a reason to skip the leave.

When to get a human tutor. You have run the recap and the table, or the two books, or the wait after the question, for a stretch of daily sittings, and the same diagnosis is still the one in the room, and the hour has become a fight. A tutor is a release valve, not a failure of the sitting. Keep yourself as the person who can still hear a fluent recap with no box score.

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The short version: the student talks and looks first. A tool may explain today’s idea *to you* from a named page, suggest extra questions you then vet, write a short SCRIPT for *you* to say after the student has tried, offer a hint after an attempt, or help you diagnose a reason the student already gave.

Leave these out of the hour: a chatbot as the only partner; a tool that writes the student’s reason; a pretend expert; a detector score; a certificate of thinking; a tool asked to invent what the spec sheet lists, who started last week, or what a second book says. Ages eleven to twelve: scripts and parent–child talk, not live open chat. Ages thirteen to fifteen: you still hold the account. Still no unsupervised chatbot as the only partner.

A language model will happily invent a second source, or mash two tabs into two speakers. Treat every model-supplied “as we saw” as untrusted until it lives in a named page you open. Fluent talk from a tool is performance, not the student’s check. If you asked a tool for a paper, open the paper. Language models invent sources.⁷⁶ If the tool produces the leave, the student is a spectator.

A recap, a box score, two books, and a window are tools too. Use them, then fade them.

⁷⁶William H. Walters and Esther Isabelle Wilder, “Fabrication and errors in the bibliographic citations generated by ChatGPT,” *Scientific Reports* 13 (2023): 14045. 84 short literature reviews, 636 citations; 55 percent of GPT-3.5 citations and 18 percent of GPT-4 citations were fabricated; of the real citations, 43 percent (GPT-3.5) and 24 percent (GPT-4) had substantive errors. Parent-side. If you asked a tool for a paper, open the paper. Do not update those percents to 2026 models without a new paper opened.

What “done enough” looks like

Placement is by skill, not birthday. A “grade 7 critical thinking workbook” is a publisher’s scope, not a legal grade, and not a transcript line. The record, when you need one, is a dated notebook plus a short written reason plus the check, sources named. The title a stranger can read is still English, or Science, or Social Studies. It is not Critical Thinking I.

Checklist before moving on

- You can leave a fluent recap for a box score, without a rant.
- You can hear two sources disagree without forcing a team.
- You can hear two tabs from the same site, a copyright symbol, and “the article said” as one-speaker moves.
- The student can name a claim, name two places that are not the same speaker repeating themselves, look, and say where they agree.
- At least one recap has met a box score, or a review has met a spec sheet.
- At least two library books, or two forecasts and a sky, have been named and looked at.
- Sits can be short. You did not assign a civic-web item. You did not reprint a leave-the-page civic week from another book.

If most of that list is true, go on to graphs, even if the birthday says otherwise. If the birthday says “ninth grade” and one speaker is still doing all the work, stay. The next chapter puts a rainfall graph on the table and asks what the picture actually shows.

A path through ordinary challenges is the promise. A diploma is not.

Chapter 5

Graphs

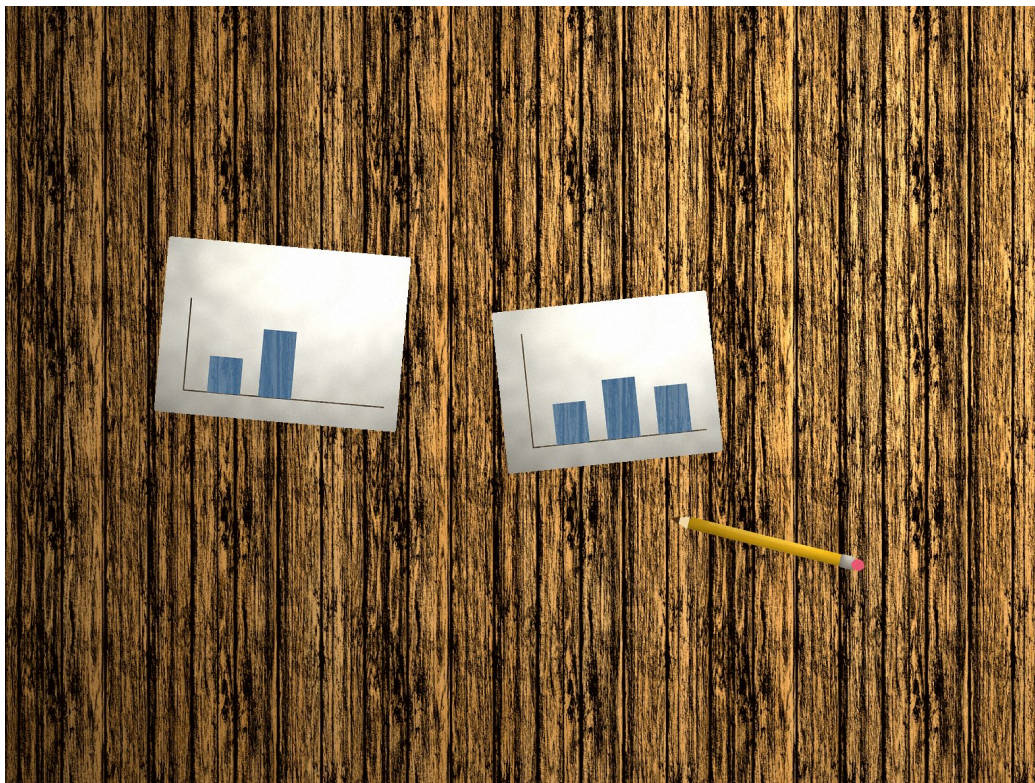


Figure 11: A simple two-bar rainfall graph on a kitchen table, axis starting above zero, a pencil, and the same numbers redrawn from zero on scrap paper

Why this matters

What does this graph actually show?

That question unlocks a picture made of numbers. At eleven to fifteen a graph is a claim made with ink. Someone chose the title, the units, where the axis starts, and what to leave off. Reading that claim is a named school skill. It is also a thinking move you can practice on rain, a box score, a homework sheet, and a library-hours poster. You do not need a statistics course. You do not need a culture-war infographic. You need one picture, one look at the axis, and one honest sentence about what the picture does and does not say.

A graph can be honest. A graph can also make a small change look like a leap, simply by where the picture starts. Adults are not immune. In one useful study of y-axis truncation — chopping the axis so it does not start at zero — about five in six participants across five studies saw the illustrated difference as larger than it was. Teaching about truncation helped a little and did not wipe the effect out. Graph literacy did not predict who was fooled. The sample was adult, including people with advanced degrees. This is a useful study, not a promise that every home will see the same result, and not a trial of eleven- to fifteen-year-olds.⁷⁷ The move is still worth teaching: *where does this picture start?*

That is worth the struggle because the house already meets graphs. A rainfall bar on a weather page. A table of minutes and points after a game. A homework sheet with a line that climbs. A poster of library hours. A serving-size table on a box already bought. Each of those can be a fluent caption — “huge jump,” “we dominated,” “it went way up” — offered as if the picture had already done the looking. The parent who can hear a caption offered as a check can teach this week. The student who can lift a number, compare two bars, then say what the picture does not tell them has practiced deciding what to believe on a domain they actually know.

⁷⁷Yan Shan Yang, Esteban Vargas Restrepo, Macy L. Stanley, and Elizabeth J. Marsh, “Truncating Bar Graphs Persistently Misleads Viewers,” *Journal of Applied Research in Memory and Cognition* 10, no. 2 (2021). Five studies; y-axis truncation led viewers to perceive illustrated differences as larger; the effect persisted after viewers were taught about truncation; 83.5 percent of participants across the five studies showed a truncation effect; graph literacy failed to predict the size of the effect; Cohen’s *d* 0.48–1.26. Adult sample, including PhD students. Useful study, not a promise, not an 11–15 randomized trial. Object of practice in this chapter: a rainfall graph. Full cell tables **UNVERIFIED** this fetch. Access date for sources in these notes: 1 September 2026.

This week you can learn three ordinary-language levels of graph reading, and how to ask “where does this picture start?” of a rainfall graph. Today the student can read a rainfall bar, compare two months, then redraw from zero and say whether “huge jump” was the numbers or the picture.

For the parent: understand it yourself

You do not need to be a statistician. You do need to hear “look at that leap” as a caption, not yet a look at the axis, and “the recap said we dominated” as a sentence that still has a table.

Everyday picture. Two months of rain. April, 48 millimetres. May, 56 millimetres. Someone draws two bars. The axis starts at 40. April’s bar is a short stub. May’s bar looks twice as tall. “Huge jump,” someone says. Now redraw the same numbers from zero. The leap shrinks. The numbers did not change. The claim “huge jump” was the picture’s.

Precise picture. A graph is a *claim made with ink*. Three jobs, in ordinary language, named by researchers who study how students read graphs.⁷⁸

- **Read the data.** Lift a number. What does this bar say? April, 48 millimetres. Title, axes, units first.
- **Read between the data.** Compare. Which month was wetter, and by how much? Students often manage the first job. Errors cluster here: subtracting the wrong way, interpolating a point that is not there, treating a chopped axis as if it were the size of the change.

⁷⁸Susan N. Friel, Frances R. Curcio, and George W. Bright, “Making Sense of Graphs: Critical Factors Influencing Comprehension and Instructional Implications,” *Journal for Research in Mathematics Education* 32, no. 2 (2001): 124–158. Graph sense; Curcio’s three levels — read the data, read between the data, read beyond the data — as reported in this review; students experience few difficulties with “read the data” and make errors on “read between”; grades 6–8 add histograms, box plots, line graphs; middle-graders still stumble when data reduction “disappears” the actual points. Frances R. Curcio, “Comprehension of Mathematical Relationships Expressed in Graphs,” *Journal for Research in Mathematics Education* 18, no. 5 (1987): 382–393, is the source of the three-level terminology; the 1987 full PDF was not independently opened this pass; three-level language is via Friel, Curcio, and Bright 2001. Robert H. Ennis, “The Nature of Critical Thinking: Outlines of General Critical Thinking Dispositions and Abilities,” 2015 PDF: Ability #4, a recent addition, “Understand and use elementary graphs and maths.” This chapter is a thinking manual that uses elementary graphs; it is not a mathematics textbook.

- **Read beyond the data.** Predict, or notice what the graph does not say. Will June be wetter? The picture does not tell you. Beyond needs prior knowledge related to the graph — what rain *is*, what a millimetre of rain means, that two months are not a climate. A maxim without that knowledge will not implement.⁷⁹

Those three jobs are not a personality of distrust. Some graphs start at zero and show what they claim to show. The move is the axis, the units, and the missing piece — not “all graphs lie.”

A table is a cousin of a graph. A box score is a table. Minutes, points, turnovers. The recap’s word *dominated* is a caption. The table is a second look. You already practiced leaving a recap for a box score in the two-source chapter. This chapter asks what the *table* actually shows, then what it does not.

You will also meet a homework graph in a car or at a table, and a poster in the wild — library hours, a weather strip outside a shop. Same three jobs. Public quiet. You do not lecture a stranger’s child. You do not turn a poster into a sermon.

Wrong answers you should be able to hear

1. The caption instead of the number. “Huge jump.” “We dominated.” “It went way up.”

What it usually means. They read the picture’s drama, not the data. The axis was skipped.

What to say. “What does this graph actually show? Where does the axis start? Let’s lift the number first.”

2. A comparison with no amount. “May was way wetter.”

What it usually means. Between-the-data work started and stopped at a feeling. The subtraction was not done.

⁷⁹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; and Willingham, “How to Teach Critical Thinking,” NSW Department of Education, 2019. Thinking is not a bicycle skill you apply in any situation; processes are intertwined with content; maxims without knowledge will not implement. Friel, Curcio, and Bright 2001: “read beyond the data” requires prior knowledge related to the graph. Near practice on rainfall does not, by itself, install unaided judgment on an unfamiliar later chart. Cue the similarity (“this is like the rainfall picture”).

What to say. “Which month was wetter, and by how much?” Wait. If they need it: “48 and 56. That’s 8 millimetres. Is 8 a leap, or does the picture make it look like one?”

3. Beyond the data with no knowledge, or a moral in place of a look. “This proves the weather is getting wild.” Or: “Whoever drew this is trying to trick us.”

What it usually means. They jumped to a story the picture cannot carry, or they treated a chopped axis as a character flaw. The rainfall graph in front of you is two months. Two months are not a climate, and a chopped axis is a design choice, not a personality.

What to say. “What does this picture *not* tell you? What would we still need to know?” Then, if needed: “We have two months. We do not have a year. The axis started at 40. That is the look we have.”

4. The recap as the table. “The write-up said we dominated, so the numbers must show that.”

What it usually means. A fluent sentence from a speaker who already picked a word. The table is still sitting there.

What to say. “What’s a second place we could look? Let’s lift one number from the box score. What does *dominated* mean if we use that number?”

5. Doing the homework for them, or designing a trick. You fill in the worksheet. Or you ask them to draw a *deceptive* graph as the lesson.

What it usually means. The sitting became a rescue, or it became a how-to for a trick. Neither is this chapter.

What to say. Ask one Curcio-level question they can actually answer: title, axis, units, or “what is missing?” Then stop. Stay with rainfall. You are teaching how to *read* a picture, not how to manufacture one that misleads.

Five-minute parent warm-up

Before the sitting, no student in the room:

1. Draw two bars: 48 and 56, axis starting at 40. Then redraw from zero. Say out loud, to the empty room: “What does this graph actually show?” Wait

a slow three. Three seconds is a convention from classroom think-time, not a homeschool study.⁸⁰

2. Write the three levels in ordinary language: lift a number; compare; say what it does not tell us. You will not lecture those words as vocabulary. You will have them.
3. Write one caption you expect — “huge,” “dominated,” “way up” — and the better question: “Where does this picture start?” Then, if needed, the redraw from zero.

If those three are fluent for you, you can hear a caption offered as a check. That is the job. The student still lifts the number.

How to teach it this week

The sitting uses the thinking-hour shape already in the front of this book: warm-up, short model, student attempt, one good question, mixed practice, exit ticket. Fill it with rainfall, a table, or a homework graph. Stop while it is still a sitting.

Warm-up (2–4 minutes). Yesterday’s two-source look, from memory. “What was the second place we looked?” Then: “Today the picture is the claim. We will ask what it actually shows.” No new graph yet.

Short model (5–8 minutes). Put the rainfall picture on the table.

⁸⁰Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament; written for classroom teachers. A parent can use the move. The parent is not replicating a homeschool wait-time trial; none was opened for this book.

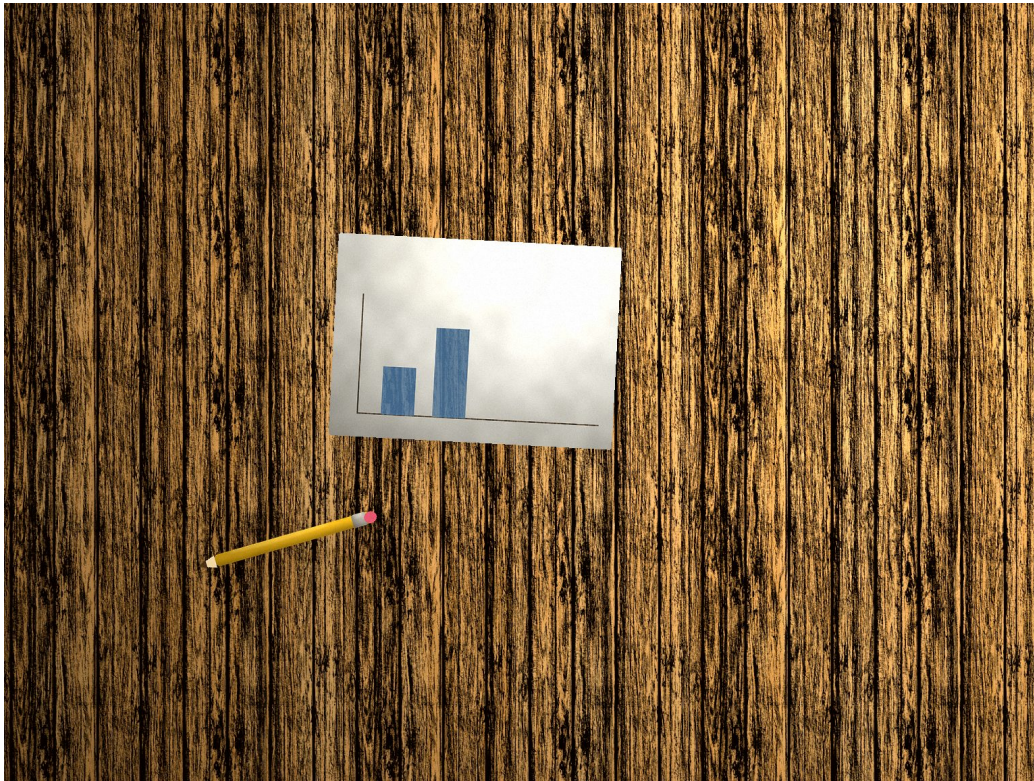


Figure 12: Two rainfall bars, April 48 mm and May 56 mm, y-axis starting at 40; the same numbers redrawn from zero on a second scrap. Generic, no logos

You name the claim the picture seems to make: “huge jump.” You lift April: 48 millimetres. You lift May: 56. You wait. You ask where the axis starts. You redraw from zero. You say what you saw: the numbers did not change; the leap was the picture’s. Then you show the *wrong* cousin on purpose: treating “huge” as the look, without the axis. “Can we tell for sure from the drama of the bars?” Wait. Then stop talking sooner than feels polite.

Exact wording you can steal.

On the picture: “What does this graph actually show?”

On the start: “Where does this picture start? Where does the axis begin?”

On the lift: “What number is this bar? What are the units?”

On the compare: “Which month was wetter, and by how much?”

On the missing piece: “What does this picture *not* tell you?”

On a caption: “I hear *huge*. Let’s look at the numbers.”

On a recap: “The write-up used *dominated*. What’s in the table?”

On mind-change: “You thought it was a leap. We redrew from zero. You can say the new thing. That is not losing.”

Student attempt. After the model, they run the next pair — last week’s rain if you have it, or a simple table of two games — with you watching. Product on a sticky note or a dated notebook line: one number lifted, one comparison, one thing the picture does not say. You wait. You do not “help” the subtraction. You do not finish the sentence.

One good question. After the attempt: “If we had started the axis at 40, could ‘huge’ still be the numbers?” The student generates the why.

Mixed practice. One rainfall redraw. One box-score lift. One homework-graph question they can actually answer. Mix, so the move is not glued to rain.

Exit ticket (2–5 minutes, unaided). “What does this graph actually show? Where does the axis start?” Spoken is enough. At fourteen to fifteen, one dated line: title, one number, one comparison, one missing piece. Tool closed.

How to fade help. You name all three jobs (lift, compare, missing) → they lift while you name the rest → they name all three → they catch a chopped axis without your prompt. When they can say “this picture starts at 40” without a hint, put the sticky-note scaffold away. Bring it back when a new kind of picture arrives — a line graph, a homework scatter, a poster in the wild.

When to stop talking. After one model and one question. You hold the key: is there a title, an axis, a number, a wait? You do not become a lecture about statistics. The word *truncation* can wait. The axis cannot.

Age-band moves

11–13. Keep the picture near. Two bars. A simple table. Title, axes, units, one comparison. First-order is enough: I thought it was a leap; we redrew from zero; the numbers are 48 and 56. A caption will still arrive as if it were a look. Hear it. Ask where the picture starts. Then look. You may name a better reason if the sitting needs one. Silence in the face of a false caption leaves them with the error.

“Read beyond” stays small: what two months do not tell you. Do not ask them to predict a climate.

14–15. Same moves, slightly heavier grain. They can name the three jobs before you prompt. They can catch a chopped axis on a new picture. They can say what prior knowledge a “beyond” question would need — and refuse a beyond they do not have. They can treat a box score as a table and a recap as a caption. They can write one dated line. They still skip the axis, some of the time. They still need the object. A fluent sentence is not a check. Graph sense is not a bicycle they now ride to every later chart. Content knowledge and graph knowledge both matter.⁸¹

Placement is by skill, not birthday. A fifteen-year-old who still reports “huge” without the axis is still in the 11–13 band of this chapter. An eleven-year-old who catches “this starts at 40” is already practicing the 14–15 catch. A publisher’s “grade 7 critical thinking workbook” is a scope, not a legal grade, and not a transcript line.

Practice that actually builds learning

Named try-its. Time, materials, safety, the fun, the skill. At least one lives at the table. At least one lives outside, so the move can travel. Kitchen, car, library, and a poster *are* the practice. They do not replace the named move.

Try-it 1 — Rainfall graph, fridge or table

Time. 5–10 minutes. Then stop.

Materials. A real rainfall graph: class weather page, homework, last week’s rain you jot as two bars, or the 48 / 56 picture you just drew. Pencil. Scrap paper for the redraw from zero.

Safety. None special. Ordinary paper.

⁸¹Priti Shah and James Hoeffner, “Review of Graph Comprehension Research: Implications for Instruction,” *Educational Psychology Review* 14, no. 1 (2002): 47–69. Visual features, graph-schema knowledge, and content knowledge jointly drive comprehension. Full pagination **UNVERIFIED** this fetch. National Assessment of Educational Progress, grade 8 mathematics, 2024: data analysis is 16 percent of the assessment — a population fact about what is on a national maths sitting, not an effect size for this chapter’s try-its. Helsinki/Tampere MediaWatch adolescent coefficients **UNVERIFIED** this fetch and are not printed.

The fun. Redrawing from zero and watching the leap shrink.

The skill. Three levels in ordinary language. “Where does this picture start?” Noticing that scale can mislead, without claiming an eleven-to-fifteen trial of that noticing.

How to run it. Put the picture down. Opening question: “What does this graph actually show?” Wait. Lift one number. Compare two months, with the amount. Ask where the axis starts. Redraw from zero. Last thoughts: “I used to think it was a huge jump. Now I think the numbers went up by 8 millimetres, and the picture made that look larger.” That sentence is allowed. It is not a confession ritual.

11–13. You draw the chopped axis if they do not have a real graph. They lift and compare. You prompt the redraw.

14–15. They name title, units, and axis start first. After the redraw, they say whether “huge” was the numbers or the picture. If they jump to a weather-story the two bars cannot carry, that is information. Point back at two months.

Try-it 2 — Box score as a table, kitchen

Time. 5–10 minutes, after a game you already watched or a recap already on the table.

Materials. A recap (article, post, or spoken claim) and a box score or a simple table of minutes / points. Greek the league marks if a logo would turn the sitting into advertising. No readable brand required.

Safety. No humiliation. This is not a trial of a player or of a sibling who made the claim. The sitting is a table, not a character exam.

The fun. The recap’s *dominated* versus the numbers.

The skill. Two-source meets graph. Read the data, then between. A fluent “the recap said dominated” is not a check.

How to run it. Read the recap’s word. Open the table. “What does this table actually show?” Lift one number. Compare two rows if two exist. Ask what *dominated* is being asked to mean. If the numbers are close, the word was doing extra work. If the numbers are not close, the word may fit — and you still lifted the number.

11–13. One number. One comparison. You hold the recap so they can point.

14–15. They name who wrote the recap if the byline is there, then leave it for the table. Cue: “this is like the rainfall picture.”

Try-it 3 — Homework graph, table or car

Time. 5 minutes. The sheet already assigned.

Materials. Tonight’s graph, if there is one. Pencil they already need.

Safety. Do not do the homework for them. Do not grade the thinking from whether the worksheet is pretty.

The fun. One question they can actually answer, on work they already have.

The skill. Title, axes, units, what is missing. One Curcio-level question, not a second maths lesson.

How to run it. Before they start the items, or in the car if the sheet is in a folder: “What does this graph actually show?” Then one of: “Where does the axis start?” “What are the units?” “What does this picture not tell you?” Then they do their own items.

11–13. You pick the question. They answer from the sheet.

14–15. They pick which of the three jobs the sheet is asking for. If the sheet is asking them to read beyond, they name what knowledge they would need.

Try-it 4 — Library hours poster or weather strip, out of home

Time. 3–8 minutes of an errand you were running anyway.

Materials. A posted graph or table: library hours, a weather strip outside a shop, a simple bar on a community board. Eyes. Optional: a phone photo of the poster for the notebook later, if the library allows photography of its own sign.

Safety. Public quiet. No lecture to strangers. No gotcha against a librarian or a shop. Noticing is not a performance for the room.

The fun. “What does this actually show?” in the wild, then you go get the books.

The skill. Read the data in a place that is not a worksheet. Title, units, missing piece. The poster is a claim.

How to run it. Stop at the poster. Opening question, quiet: “What does this graph actually show?” Lift one number or one closing time. Ask what it does not tell you — holiday hours, next week, whether the weather strip is today’s. Then go inside. Last thoughts can wait for the car.

11–13. One lift. One missing piece. You keep it short.

14–15. They can say whether the poster is a table or a graph, and what a second source would be (the desk, the website hours, the sky). Cue: “this is like the rainfall picture.”

Try-it 5 — Kitchen cousin: a serving-size table on a box already bought

Time. 3–8 minutes.

Materials. One package already in the house. The front of the box and the side table.

Safety. No body talk. No food sermon. No shaming who eats what. The sitting is a table of numbers, not a nutrition culture-war.

The fun. “Serves four” versus the tin in your hand.

The skill. Claim versus table. Two-source with the front of the box. Serving size as a table — a cousin of a graph.

How to run it. Read the front word if there is one — *best*, *family size*, a number that looks large. Turn the box. “What does this table actually show?” Lift serving size. Compare the front to the side. Ask what the table does not tell you. Then put the box back. Dinner is still dinner.

11–13. One number from the side. One comparison with the front.

14–15. They name what is missing (how the serving was chosen; whether the tin matches “serves four”). They still do not turn it into a sermon.

Talk box

Exact opening question. “What does this graph actually show?”

Not: “How do people lie with statistics?” Not: “What is the vocabulary word for axis?” The question is authentic. It is about the picture in front of you.

Follow-ups (pick three to five, not all at once).

1. Meaning: “Where does the axis start? What do you mean, *huge*?”
2. Reason: “How do you know? What number did you lift?”
3. Alternative: “What would the same numbers look like from zero? Always a leap — can we think of a picture where the numbers stay and the leap shrinks?”
4. Check or second source: “What’s a second place we could look — the table, the sky, last week’s rain, the desk hours?”
5. Revise: “You may change your mind about *huge*. That is not losing.”

How to wait. After you ask, a slow three is a convention, not a sacrament.⁸² After they stop, wait again. If they are mid-reason, do not cut them off. Look at the graph or the window, not at the student, if the silence is hard. At eleven to fifteen the shrug often looks like refusal. Do not rescue it. Do not treat a science-class wait-time paper as a homeschool trial of thinking.⁸³

What a stuck silence usually means. They skipped the axes. They moralised the picture. They do not know enough about rainfall to read beyond, and the question asked for beyond. Wait-time 1 was zero. They are guessing what you want. The question was a recitation item in disguise — you already had “truncation” in mind as the word. They think “critical” means finding fault with whoever drew it. The parent’s job is to pose, wait, and point back at the object — not to fill the silence with the right caption, and not to turn the table into a fight.

One incorrect example to diagnose

A fluent recap with no box score, offered as a graph sitting.

⁸²Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament; written for classroom teachers. A parent can use the move. The parent is not replicating a homeschool wait-time trial; none was opened for this book.

⁸³Mary Budd Rowe, papers on wait-time in elementary science class (NARST 1972 / ERIC ED061103; *Journal of Research in Science Teaching*, 1974). Typical waits of about one second after a question and about 0.9 seconds after an answer; extending both to 3–5 seconds changed discourse. Setting: science class, video-taped lessons. Useful as a picture of adult hurry. Not a homeschool randomized trial and not evidence that wait-time teaches generic critical thinking. Do not mash Rowe 1972 and Stahl 1994 as if they were one paper.

The student, looking at a rainfall picture that starts at 40: “Huge jump in May. Like when we dominated last week. You can just tell from the picture.”

What went wrong. A caption did the work of a lift. A recap did the work of a table. Two fluent sentences, no number.

What to do. Hear it. Steelman if you need a fair version: “You think the picture shows a big change, and last week’s write-up used a strong word.” Then a better question: “What does this graph actually show? Let’s lift April and May.” Then look. If needed, name a better reason: “56 minus 48 is 8 millimetres. The axis started at 40, so the bars look farther apart than the numbers are.” Correct the reason. Do not crush the talk. “Never correct the student” is not this book’s rule.

For the student

A graph is a claim someone made with ink. It has a title, axes, units, and a picture. The picture can help. The picture can also make a small change look large, depending on where it starts. Your job is not to distrust every chart. Your job is to ask what this one actually shows.

Tiny worked example. April rain, 48 millimetres. May rain, 56 millimetres. Someone draws two bars and starts the side numbers at 40. May looks like a leap. You lift 48. You lift 56. You subtract: 8 millimetres more. You redraw from zero. The leap shrinks. The rain did not change. The picture did.

Three jobs, in ordinary language:

1. Lift a number. What does this bar say?
2. Compare. Which was more, and by how much?
3. Notice what the picture does not tell you. Two months are two months.

Two tries.

1. A rainfall picture is on the table. Where does the axis start? Which month was wetter, and by how much? What would the same numbers look like from zero?
2. A recap says the team *dominated*. A box score is on the other page. What number will you lift first? What does the table *not* tell you?

Explain it back. Tell someone at the table, in your own words, what “what does this graph actually show?” is asking. Then point at the rainfall picture, or the box

score, and say how you know.

Challenge. A library-hours poster, or a weather strip outside a shop, is a graph or a table in the wild. Stop. Lift one number. Ask what it does not tell you. You may change your mind about a caption you said on the way in.

You are allowed to wait. You are allowed to be wrong and then look. You write, or you say, the new sentence. A tool does not lift the number for you. A fluent “huge” is not a check. Leave this page and look at the axis.

If it isn’t clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent. None of them is a reason to wait for a birthday.

1. Every answer is a caption: “huge,” “dominated,” “way up.”

The lift has not happened yet. Next move: cover the bars with a card and show only the numbers, or cover the numbers and show only the bars, then swap. “What does this actually show?” Wait. Smaller picture: two bars, 48 and 56, axis at 40, then from zero. Slow down. Stay on rainfall until they can lift before they caption. Go ahead to the box score and the poster once “where does this picture start?” is easy. A human tutor is optional here; the materials are cheap. Bring someone in if several weeks of short sittings still end in a caption with no number *and* the hour has become a fight.

2. They compare with no amount, or they jump beyond with no knowledge.

“May was way wetter.” Or a weather-story two bars cannot carry. Next move: ask for the subtraction. Write $56 - 48$. Then ask what the picture does not tell you. If they do not know what a millimetre of rain *is*, that is a knowledge gap, not a thinking gap. Fill the knowledge, or pick a graph they already know — minutes on a clock, pages in a book, points in a game they watched. Stay on between until between is easy. Go ahead to beyond once they can refuse a beyond they do not have. A tutor is useful if the sitting is stuck on stories after you have pointed at the numbers, consistently, and the student is distressed — distress from a well-posed look is effort; distress from a parent who has taken the pencil is a different problem. Separate them.

3. The recap, the homework sheet, or the poster is treated as magic proof.

“It says dominated.” “The worksheet already has the answer in the title.” “The library poster can’t be wrong.” Fluent, and no second look. Next move: leave this sentence and look at one other thing. Open the table. Check the axis. Ask the desk. Take the poster seriously, then still lift a number. This is not a personality transplant into suspicion. It is one other thing. Slow down the “who drew this?” sitting until looking at the axis is allowed. Go ahead to the out-of-home cousin once the kitchen check is a habit. A tutor is not the first move; the object is.

When to slow down. Axis not yet noticed. Caption still the default answer to “what does this show?” Fight at the table. Those are brakes. Age is not a brake.

When to go ahead. They can lift a number. They can compare two bars with an amount. They can say where the picture starts. Then the fridge graph in the next chapter, and the walk, have somewhere to sit.

When to get a human tutor. You cannot yet hear a caption-as-check, even after the five-minute warm-up. Or the student has weeks of short sittings, and the unaided sentence is still “huge” with no number. Or the hour is a fight. A tutor is a release valve, not a failure of the kitchen. Keep yourself as the person who can still hear “look at that leap.”

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The student talks to you. The student looks at the graph. You may, on your account, after they have tried, ask a tool to explain this page to you from a named book page, to offer extra questions you will vet, to write a short SCRIPT for *you* to say, to give a hint after an attempt, or to diagnose a reason they already gave. You hear the diagnosis and you decide. Throw out any extra question that imports a live controversy, a secret, or a pretend expert. Throw out any question that asks the student to design a deceptive chart as the lesson.

The student does not sit alone with an open chat. A tool does not invent last week’s rainfall numbers, whether the library is open, or who scored. A fluent reason from a machine is performance, not the student’s check. Detectors are not a grade. There is no certificate of thinking to print.

Ages 11–12 (under 13). Scripts and parent–child talk. Not live open chat. No

child account on a general-purpose chat. Default: no child login.

Ages 13–15. Turning 13 is a legal hinge, not a thinking birthday. Still no unsupervised chatbot as the only partner. A labelled SCRIPT after the student tried remains the default. You hold the account.

A thinking tool is not a secret friend. Keep accounts, logs, and keys on your side of the table.

What “done enough” looks like

Done enough is skill, not a birthday, and not a course called Graph Thinking 1. If a log needs a mathematics line, “rainfall bars / axis / compared / redraw from zero” is a mathematics line. The title a stranger can read is still **Mathematics**, or **Science** if the work was weather, or **English** if the work was a recap versus a table. It is not Critical Thinking I.

Checklist before moving on.

- Lifts a number from a graph or a table, with units.
- Compares two bars or two rows, with an amount, not only a feeling.
- Asks, or can answer, “where does this picture start?”
- Redraws a chopped-axis rainfall picture from zero, or can say what that redraw would do.
- Names one thing the picture does not tell them.
- Hears “huge” or “dominated” as a caption, and, with a question, gets to a number.
- Changes the sentence when the redraw or the table goes the other way, without treating that as losing.
- On a poster in the wild, can use the cue “this is like the rainfall picture.”

What can still be thin: unaided far transfer to an unfamiliar later chart with no cue; a multivariable data set; reading beyond without the domain knowledge. Those can wait. They are not a window that closed. Graph sense is not a bicycle. Knowledge of rain, of the game, of the library’s hours, still has to be in the room.⁸⁴

⁸⁴Priti Shah and James Hoeffner, “Review of Graph Comprehension Research: Implications for Instruction,” *Educational Psychology Review* 14, no. 1 (2002): 47–69. Visual features, graph-schema knowledge, and content knowledge jointly drive comprehension. Full pagination **UN-VERIFIED** this fetch. National Assessment of Educational Progress, grade 8 mathematics, 2024:

A parent who felt rusty should be able to say, after this chapter: I understand the three levels. I know what to say tomorrow. I know what a caption offered as a check sounds like. The student still lifts the number. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can change my mind when we look at the axis.

data analysis is 16 percent of the assessment — a population fact about what is on a national maths sitting, not an effect size for this chapter's try-its. Helsinki/Tampere MediaWatch adolescent coefficients **UNVERIFIED** this fetch and are not printed.

Chapter 6

Inside the home

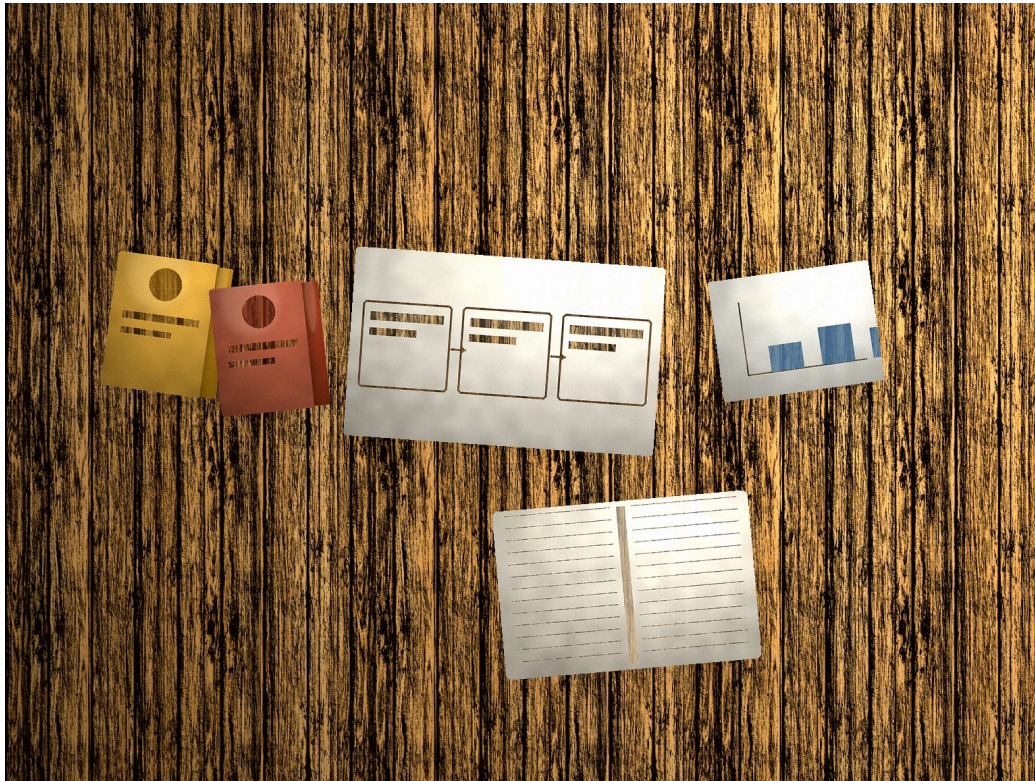


Figure 13: A kitchen table with two generic packages, a paper map of three empty boxes labelled Claim / Reason / Objection, a fridge graph, and an open notebook

Why this matters

What is the one thing we changed?

Let me say it back in the strongest way...

Those two sentences unlock the house. A counter, a dinner table, a fridge, a notebook, a sibling, a texted claim. You do not need a lab. You do not need a circle of twenty. You do not need a Bronze-to-Gold award scheme. The furniture is already there. One sitting changes one thing, keeps the rest the same, and looks. Another sitting says the other side so they would nod, then checks.

A kitchen is a one-change lab if the family wants it, and a claims lab if they do not. Two recipes, two labels, two pans. A package that says a number on the front and a different number on the side. A graph already on the fridge. Three boxes on paper: Claim / Reason / Objection. A sibling's sentence, or a text, said back in the strongest fair way. Each of those is something the student already knows. Thinking lives on that something. It is not a bicycle you install at eleven and ride to every later problem.

A one-change check is scientific reasoning — deciding which factor did the work — not a general thinking gym you install in the kitchen.⁸⁵ The evidence for teaching it comes from children who were shown how to design an unconfounded test, and from a later research review of that same skill, not from a sitting that claims to measure “critical thinking” as a trait.⁸⁶ The kitchen version is smaller and honest: name the claim, name the one thing you will change, name what you will keep the same, look, say what you saw. If a log needs a science line, “two labels / one-change / looked” is a science line. The title a stranger can read is still **Science**. It is not Lab Thinking 1.

⁸⁵Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): 1098–1120. *n* = 87, ages 7–10. Explicit training plus probes outperformed probes-only on designing unconfounded experiments; remote transfer improved with age. The construct is control of variables (a fair test), which is scientific reasoning, not a generic critical-thinking inventory. Access date for sources in these notes: 1 September 2026.

⁸⁶Martin Schwichow, Simon Croker, Corinne Zimmerman, Tim Höffler, and Hendrik Härtig, “Teaching the Control-of-Variables Strategy: A Meta-Analysis,” *Developmental Review* 39 (2016): 37–63. Mean *g* = 0.61 (95% CI 0.53–0.69) after excluding outliers; assessment format is a major source of between-study variance. Control of variables “does not routinely develop without practice or instruction.” Not a Watson–Glaser or CCTST meta-analysis, and not a licence to call a kitchen sitting generic critical thinking.

That is worth the struggle because the house already makes claims all day. “This recipe rose more.” “Serves four.” “We dominated.” “You always get the last word.” “Because I wanted it more.” Each of those can be a wish, a story that makes sense, or a look. The parent who can hear which is which can teach this week. The student who can look, say the other side fairly, and then change the sentence if the look goes the other way, has practiced deciding what to believe on a domain they actually know.

This week you can learn one-change labelled as scientific reasoning, how to hear a mechanism-story offered as if it were a look, and three boxes on paper before any app. Today the student can try two labels or two recipes, name the one thing that changed, look, and — if a dispute is on the table — say the other side so they would nod.

For the parent: understand it yourself

You do not need to be a philosopher. You do need to hear “because we wanted it more” as a why-story, not a look at the yield, and “let me say it back” as fairness, not as giving up.

Everyday picture. Two pans. Same batter, split. One pan on the middle rack, one on the top, same oven, same time, same size pans. Afterward one is browner. If you also used a bigger pan on the top, you cannot tell whether rack or size did the work. If you only moved the rack and kept the rest the same, you can say what you saw about the one thing you changed. Dinner still happens. The sitting is ten to thirty minutes, then you eat.

Precise picture. A *claim* is a sentence that can be true or not, about something you can look at. “This fold holds more.” “Serves four.” “You always start.” A *one-change check* is a look in which only one thing is different on purpose. Everything else you can reasonably keep the same, you keep the same. Then you look. Then you say what you saw, not what you hoped. That is scientific reasoning. It is not generic critical thinking with a lab coat on.⁸⁷

⁸⁷Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): 1098–1120. n = 87, ages 7–10. Explicit training plus probes outperformed probes-only on designing unconfounded experiments; remote transfer improved with age. The construct is control of variables (a fair test), which is scientific reasoning, not a generic critical-thinking inventory. Access date for sources in these notes: 1 September 2026.

A reason that makes sense is not the same as evidence that it happened. “The muffins rose because we wanted them to” is a why that might feel true. “This pan is taller by a finger” is a look.⁸⁸ Keep those two questions apart: *How do you know it happened?* then, separately, *Why might it have happened?*

You also already have a *speaker* in the house: the box on the counter, the sibling, the text. What does it *say*? What is missing? How could we check? The box is not a sermon about food. It is a sentence on cardboard. Two labels are two speakers. Speakers can be incomplete.

A *steelman* is the strongest fair version of what they mean, said so they would nod. It is not agreement. It is not giving up the last muffin. After you say it back, you still look. Dual focus — your side and theirs — is promptable at this age. It is not the default. Own-side talk is the default.⁸⁹

Three boxes on paper — Claim / Reason / Objection — are a type, not a university semester of argument mapping, and not a promise about a later inventory score.⁹⁰ Paper before any app. For eleven and twelve, paper also avoids a login a child that age should not have.

Last thoughts: “I used to think... now I think...” That sentence makes a change of mind audible. It is not a confession ritual.⁹¹

⁸⁸Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): 1–8, on differentiating an explanation of why a claim makes sense from evidence that the claim is true. Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1 (2000): 113–129: coordination of theory and evidence may not develop fully even by adulthood. Kitchen objects in this chapter: a recipe yield, a sports result, two cups — not a science-year textbook.

⁸⁹Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–153. Seventh- and eighth-graders produce argumentative discourse and are more own-side, less strategic, than young adults. Deanna Kuhn and Wadiya Udell, “Coordinating Own and Other Perspectives in Argument,” *Thinking & Reasoning* 13, no. 2 (2007): 90–104: dual focus is promptable, not default. Topic of some of those studies is not copied into this book’s examples; the shape (counter, evidence, steelman) is.

⁹⁰Tim van Gelder, “Using Argument Mapping to Improve Critical Thinking Skills,” in *The Palgrave Handbook of Critical Thinking in Higher Education*, ed. Martin Davies and Ronald Barnett (New York: Palgrave Macmillan, 2015). University setting; no 11–15 argument-mapping randomized trial was opened for this book. Home type = three boxes on paper. Developer-adjacent effect sizes from college semesters are not printed here as an 11–15 result.

⁹¹Robert H. Ennis, “The Nature of Critical Thinking: Outlines of General Critical Thinking Dispositions and Abilities,” 2015 PDF. Disposition 9 includes looking for alternatives and being willing to change a position when the evidence so requires; this chapter makes that audible as “I used to think... now I think...,” not as a confession ritual. The concept of critical thinking is not

Wrong answers you should be able to hear

1. Two things changed; one claim. “The middle rack did it — and also I opened the door, and that pan was darker metal.”

What it usually means. The one-change rule was never named, or the wow ate the rule.

What to say. “What is the one thing we changed? What did we keep the same? Can we tell for sure?”

2. The hope reported as the look. “It will rise because I want it to.” Or: “There are four servings because the front says family.”

What it usually means. A wish or a front-of-box word was offered where a look was asked for. That is ordinary. It is still a wish.

What to say. “I hear that you want that. How could we check? Let’s look at the side table, or at the pan.”

3. A mechanism-story offered as the look. “It rose because the batter was happy.” “We won because we wanted it more.”

What it usually means. A why that makes a picture in the mind is standing in for what we saw. The story may even be charming. Charm is not the check.

What to say. “I hear that story. What did you actually see? How do you know it happened — that’s a different question from why it might have.” Then, if needed, name a better reason or point at the object.

4. Steelman taken as giving up. “If I say theirs fairly, I lose.” Or a steelman that is actually a straw: “So you think I’m just being lazy.”

What it usually means. Dual focus feels like surrender, or the fair version was never attempted.

What to say. “Let me say it back in the strongest way: you think X because Y. Is that fair?” Wait. Then: “Saying it fairly is not agreeing. Then we look.”

5. The paper map as decoration, or an app before paper. Three empty boxes on the fridge, never filled. Or a login for a mapping site before anyone has drawn a box.

negative.

What it usually means. The type was copied as furniture. The claim never sat in a box.

What to say. Fill one claim tonight. Paper first. The site, if you ever use one, waits.

Five-minute parent warm-up

Before the sitting, no student in the room:

1. Write tonight's claim in one sentence. Then write the one thing you will change, and two things you will keep the same. If you cannot name the one thing, tonight is not a fair test. It can still be a dinner question, a two-label look, or a steelman.
2. Say out loud, to the empty room: "What is the one thing we changed?" Wait a slow three. Then say: "Let me say it back in the strongest way..." Wait again. Three seconds is a convention from classroom think-time, not a homeschool study.⁹²
3. Write one wrong reason you expect to hear — a two-things setup, a hope, a "wanted it more," a steelman-as-surrender — and the better question you will ask next. Then, if needed, the better reason or the look.

If those three are fluent for you, you can hear a mash, a wish, and a straw offered as a steelman. That is the job. The student still looks.

How to teach it this week

The sitting uses the thinking-hour shape already in the front of this book. Fill it with one-change, two labels, a fridge graph, or a steelman. Stop while it is still a sitting.

Warm-up (2–4 minutes). Yesterday's rainfall picture, from memory. "Where did the axis start? What did we used to think?" Then: "Today we change one thing, or we say theirs fairly." No new apparatus yet.

⁹²Robert J. Stahl, "Using Think-Time and Wait-Time Skillfully in the Classroom," ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament; written for classroom teachers. Mary Budd Rowe's wait-time papers (NARST 1972 / ERIC ED061103; *Journal of Research in Science Teaching*, 1974) are science class. Do not mash Rowe and Stahl as if they were one homeschool trial. None was opened for this book.

Short model (5–8 minutes). Two versions of something already in the house: two folds of paper over a spill, two tea bags and two cups, two recipes that differ in one named way if you already cook. You name the claim. You name the one thing you will change. You name what you will keep the same. You look. You say what you saw. Then you show the *wrong* cousin on purpose: two things changed at once. “Can we tell for sure?” Wait. Then, if a sibling claim is handy, you model one steelman sentence. Then stop talking sooner than feels polite.

Exact wording you can steal.

On the rule: “What is the one thing we changed?”

On the rest: “What did we keep the same?”

On the look: “What did you see — not what you hoped?”

On a wish: “I hear that you want that. How could we check?”

On a story: “I hear that. How do you know it happened? That’s a different question from why it might have.”

On a box: “What does this say? What’s on the side? What’s missing?”

On steelman: “Let me say it back in the strongest way: you think X because Y. Is that fair?”

On the map: “Claim in this box. Reason in this one. Objection in this one. Paper first.”

On mind-change: “You thought X. We looked. You can say the new thing. That is not losing.”

On dinner: one question, then wait. Chewing is not a hearing.

Student attempt. After the model, they run the next pair — two labels, two folds, or a steelman of a text already on the table — with you watching. Product on a sticky note or a dated notebook line: the one thing changed, two things kept the same, one sentence of what they saw; or the steelman sentence plus the check. You wait. You do not “help” one pan. You do not finish the reason.

One good question. After the attempt: “If we had changed two things, could we tell for sure?” Or: “Would they nod at that version?” The student generates the why.

Mixed practice. One dinner question. One two-label. One fridge-graph lift from Chapter 5. Mix, so the move is not glued to muffins.

Exit ticket (2–5 minutes, unaided). “What is the one thing we changed? What did you see?” Or a one-sentence steelman. Spoken is enough at eleven to thirteen. At fourteen to fifteen, one dated line in the notebook: claim, one change or steelman, what we looked at. Tool closed.

How to fade help. You name all three (claim, one change, keep-the-same) → they name the one change while you name the rest → they name all three → they run the next sitting with you in the doorway. For steelman: you say the fair version → they repair one word → they say it so the other person would nod. When they can catch a two-things setup, or a straw, without your prompt, put the sticky-note scaffold away. Bring it back when a new kind of check arrives — a homework graph, a store cousin, a texted claim.

When to stop talking. After one model and one question. You hold the key: is there a claim, one thing changed or a fair version of theirs, a look, and a wait? You do not become a lecture about variables. The word *variable* can wait. The look cannot. Dinner is still dinner.

Age-band moves

11–13. Keep the check near. Same two pans if you already cook; same two folds of paper if you do not. Two labels already in the house. Speech can be talk, not a paragraph. First-order is enough: I thought the front was the look; we turned the box; the side said something else. A why-story will still arrive as if it were a look. Hear it. Ask how they know it happened. Then look. Steelman is one sentence: “You think X because Y. Is that fair?” Paper map: three boxes, one claim. You may name a better reason if the sitting needs one. Silence in the face of a false reason leaves them with the error.

14–15. Same moves, slightly heavier grain. They can name the one change and two keep-the-sames before the water hits the cloth. They can turn two packages and say what the front claims and what the side lists. They can separate “why it might have risen” from “how we know it rose this time.” They can steelman in two sentences and then name a check. They can fill four boxes if you add Counterexample. They can write one dated page: short written reason plus the check, stimulus named, sources named. Wait can include that page. They still

mash, some of the time. They still need the object. A fluent sentence is not a check. Dual focus still wants a prompt more often than it arrives unaided.⁹³

Placement is by skill, not birthday. A fifteen-year-old who still reports the hope is still in the 11–13 band of this chapter. An eleven-year-old who catches “you changed two things” is already practicing the 14–15 catch. A publisher’s “grade 7 critical thinking workbook” is a scope, not a legal grade, and not a transcript line.

Practice that actually builds learning

Named try-its. Time, materials, safety, the fun, the skill. The centre of this chapter is the house. At least one cousin lives outside, so the move can travel. Kitchen, dinner, fridge, paper, and a store aisle *are* the practice. They do not replace the named move.

Try-it 1 — One-question dinner

Time. 3–5 minutes, when food is already there.

Materials. Dinner already happening. No extra kit.

Safety. Do not interrogate chewing. Do not turn a meal into a courtroom. If the stakes are hot, pick a cooler claim, or postpone.

The fun. One actual question, then the pass of a dish.

The skill. One family from the talk box. Wait. Meaning or reason, not a recitation item.

How to run it. One question. “What do you mean, *always*?” or “How do you know?” or “What’s a second place we could look?” Then wait a slow three. Then eat. Last thoughts can wait until plates are down.

11–13. You ask. They answer in a sentence. You do not stack a second question until they have finished.

⁹³Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–153. Seventh- and eighth-graders produce argumentative discourse and are more own-side, less strategic, than young adults. Deanna Kuhn and Wadiya Udell, “Coordinating Own and Other Perspectives in Argument,” *Thinking & Reasoning* 13, no. 2 (2007): 90–104: dual focus is promptable, not default. Topic of some of those studies is not copied into this book’s examples; the shape (counter, evidence, steelman) is.

14–15. They may ask the question of someone else at the table, if that someone is willing. Still one question. Still not a trial.

Try-it 2 — Kitchen fair test, labelled scientific reasoning

Time. 10–30 minutes. Then stop.

Materials. Timer. Two pans, or two folds of paper and a spill, or two recipes that already differ in one named way, or two cups and two tea bags. Water. A towel for the floor. Optional: a dated notebook line.

Safety. Heat and knives stay in the hands of someone who already cooks. This chapter's default is water, ice, paper, two labels, two recipes you were making anyway — not a flame for anyone who cannot already cook, and not a nutrition sermon. Floor wet; drip; ordinary water. No gotcha experiments. No body talk. You do not “help” one pan.

The fun. Racing two versions. Watching which fold darkens first.

The skill. One change; look. Scientific reasoning, not generic critical thinking. Rules of the type: name the claim; name the one thing you will change; name what you will keep the same; look; if the student offers a wrong reason, hear it, then a better question, then if needed a better reason.

How to run it. Name the claim (“this fold holds more,” “the middle rack browns faster,” “steeping longer makes a darker cup”). Name the one thing you will change. Name two things you will keep the same. Look. If they offer “because it wanted to,” hear it, then “what did you see?” Last thoughts: “I used to think... now I think...”

11–13. You name the one change. They pour or they watch. They say what they see in a short sentence.

14–15. They name the one change and the keep-the-sames first. After the look, they say whether we can tell for sure. If they changed two things by accident, that is information. Run it again with one change. Cue: “this is like the two pans.”

The logic of an unconfounded test can be taught explicitly. That is a finding about this skill, not a slogan that “direct instruction wins forever.”⁹⁴ Kitchen chemistry

⁹⁴Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): 1098–1120. n = 87, ages 7–10.

is a picture. It is not a Chemistry credit.

Try-it 3 — Two-recipe / two-label

Time. 5–15 minutes.

Materials. Two cards, two recipes, or two packages already in the house.

Safety. No food-shaming. No body talk. No sermon about what anyone should eat. The sitting is two speakers, not a culture-war.

The fun. “Serves four” versus the tin. Two recipes that disagree about a time or a yield.

The skill. Two-source. Claim versus table. What is missing.

How to run it. Read the front, or the first recipe’s yield. Open the side, or the second recipe. “What does this say? What does that one say? What’s missing? How could we check?” If you then cook, that check is Try-it 2. If you do not cook, the check can be the tin in your hand, or a third source tomorrow.

11–13. One pair. One missing piece.

14–15. They name who would be in a position to know (the person who filled the tin; the person who tested the recipe). They still do not turn it into a sermon.

Try-it 4 — Graph on the fridge / homework

Time. 5–10 minutes.

Materials. Weather strip, box score, assigned graph. Pointer back to Chapter 5.

Safety. Do not do the homework for them.

The fun. One question they can actually answer, on a picture already in the house.

The skill. “What does this graph actually show?” Title, axis, units, what is missing.

Explicit training plus probes outperformed probes-only on designing unconfounded experiments; remote transfer improved with age. The construct is control of variables (a fair test), which is scientific reasoning, not a generic critical-thinking inventory. Access date for sources in these notes: 1 September 2026.

How to run it. Point at the fridge or the sheet. One Curcio-level question. Lift a number. Ask where the picture starts if it is a graph. Then stop. Cue: “this is like the rainfall picture.”

11–13. You pick the question.

14–15. They pick which job the picture is asking for — lift, compare, or missing piece.

Try-it 5 — Paper argument map

Time. 8–15 minutes.

Materials. Scrap paper. Three boxes: Claim / Reason / Objection. Optionally a fourth: Counterexample. Pencil. No software required.

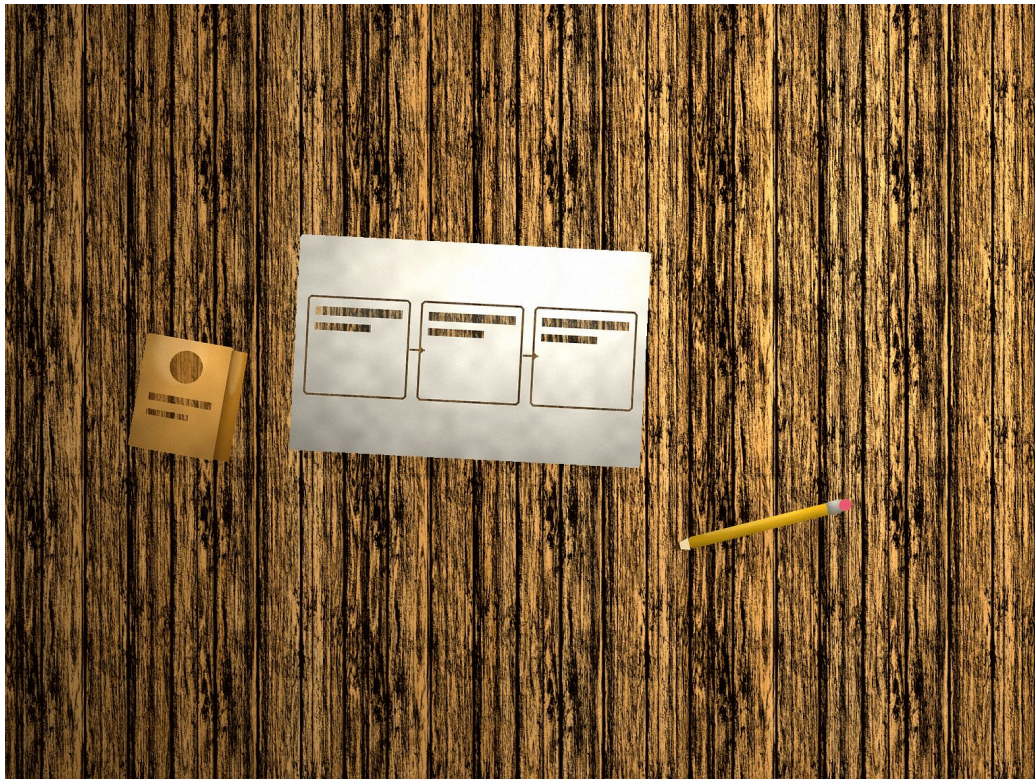


Figure 14: Three empty boxes on scrap paper, labelled Claim, Reason, and Objection, on a kitchen table

Safety. Paper before any app. For eleven and twelve, paper also keeps a child login off the table. No audience of neighbours.

The fun. Filling boxes. Dropping a weak reason on purpose.

The skill. A mapping *type*, scaled. Some reasons are better than others; you may drop a weak one — that is correction, not unkindness.⁹⁵ It is not a university course and not a later-test promise.⁹⁶

How to run it. One real claim from the house: a recipe yield, a sibling’s “always,” a recap’s *dominated*. Write the claim. Write one reason. Write one objection. If a reason is weak, say so and drop it or repair it. Then name a check: the pan, the list, the box score.

11–13. Three boxes. You scribe if writing is the bottleneck. They still say the words.

14–15. Four boxes if you add Counterexample. They write. They may keep the page as the short written reason plus the check.

Try-it 6 — Steelman a sibling / a text

Time. 5–10 minutes.

Materials. The disputed claim: a spoken sentence, or a text already on a family phone you are allowed to look at together.

Safety. No audience of neighbours. No public pile-on. No humiliation. If the stakes are hot, postpone. Practice on a cooler claim.

The fun. Saying it so they would nod — then still looking.

The skill. Dual-perspective. Strongest fair version. Then a check. A steelman that is actually a straw is the incorrect cousin to diagnose.

⁹⁵Deanna Kuhn and Wadiya Udell, “The Development of Argument Skills,” *Child Development* 74, no. 5 (2003): 1245–1260. Reasons on cards; some are better; you may drop a weak one — that is correction. Dense peer dialogue was the more effective arm of that design. A family of three is not that design. “Never correct the student” is not this book’s rule.

⁹⁶Tim van Gelder, “Using Argument Mapping to Improve Critical Thinking Skills,” in *The Palgrave Handbook of Critical Thinking in Higher Education*, ed. Martin Davies and Ronald Barnett (New York: Palgrave Macmillan, 2015). University setting; no 11–15 argument-mapping randomized trial was opened for this book. Home type = three boxes on paper. Developer-adjacent effect sizes from college semesters are not printed here as an 11–15 result.

How to run it. Opening: “Let me say it back in the strongest way: you think X because Y. Is that fair?” Wait. Repair until they would nod, or until the student has done that for the other person. Then: “What’s a second place we could look?” Then look. Last thoughts: “I used to think... now I think...” if the check moved the claim.

11–13. One sentence. You may model first.

14–15. Two sentences, then they name the check. Cue: “this is like the three boxes.”

Try-it 7 — Short written reason plus the check

Time. 10–20 minutes.

Materials. Dated notebook.

Safety. Not a fake diploma line. Not Critical Thinking I.

The fun. A page a stranger could almost read.

The skill. Date, stimulus named, question, short reason, what you looked at, sources named. The first research-report grain. Title: still English or Science. Chapter 9 will say more. Tonight is one page.

How to run it. After any of the try-its above, write: date; what we looked at; the question; the reason; the check. Illustration, labelled as such, not a reported family:

12 September 2026. Two tea bags, two cups, same water, one steeped two minutes longer. Question: does longer steeping make a darker cup? Student: yes, because the longer cup was darker when we looked. Check: we looked at both cups in the same light. Sources: the two cups; the timer.

11–13. You write, they talk. Or they write one line.

14–15. They write the page. You read it back. If a line is not true, they say so before anyone treats it as the sitting.

Try-it 8 — Out-of-home cousin: store two-label

Time. 3–8 minutes in a shop you were already in.

Materials. One or two packages on a shelf you came to buy from.

Safety. Aisle courtesy. No lecture to strangers. No shoplifting a “test.” No tasting unknown things. No body talk. No gotcha against a shop.

The fun. Turning two boxes. Then you buy what you came to buy.

The skill. The same two-source move in the aisle. Cue: “this is like the two recipes.”

How to run it. Quiet. Front versus side, or two similar packages. One missing piece. Then keep moving. Last thoughts in the car.

11–13. One pair. You hold the basket.

14–15. They name what a second source would be (another brand’s side table; a recipe at home). They still do not perform for the aisle.

Talk box

Exact opening question. “What is the one thing we changed?” (fair test) or “Let me say it back in the strongest way: you think X because Y. Is that fair?” (steelman).

Not: “Define a controlled variable.” Not: “Who is right?” The question is authentic. It is about the pans, the labels, or the person in front of you.

Follow-ups (pick three to five, not all at once).

1. Meaning: “What do you mean, *always*? What do you mean, *serves four*?”
2. Reason: “How do you know? What did you see?”
3. Alternative or counterexample: “What did we keep the same? Always? Can we think of a time it wasn’t?”
4. Check or second source: “What’s a second place we could look — the side of the box, the other recipe, the list, the box score?”
5. Revise or steelman: “You may change your mind. That is not losing.” Or: “Say theirs so they would nod.”

How to wait. After you ask, a slow three is a convention, not a sacrament.⁹⁷ After they stop, wait again. If they are mid-reason, do not cut them off. Look at the

⁹⁷Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament; written for classroom teachers. Mary Budd Rowe’s wait-time papers (NARST 1972 / ERIC ED061103;

pans, the graph, or the window, not at the student, if the silence is hard. At eleven to fifteen the shrug often looks like refusal. Do not rescue it.

What a stuck silence usually means. They changed two things. They reported the hope. They collapsed how and why. They think steelman means giving up. Wait-time 1 was zero. They are guessing what you want. The question was a recitation item in disguise. They think “critical” means finding fault. The parent’s job is to pose, wait, and point back at the object — not to fill the silence with the right answer, and not to turn the table into a fight.

One incorrect example to diagnose

A steelman that is actually a straw, offered as fairness.

Sibling: “I should pick the show because I did the dishes.”

Student: “So you think you’re the only one who ever helps, and the rest of us just sit here.”

What went wrong. The fair version was never attempted. A weaker, uglier cousin was knocked down. Dual focus was skipped. Own-side talk did the sitting.

What to do. Hear it. Then: “Let me say it back in the strongest way: you think picking the show is fair tonight because you did the dishes. Is that fair?” Wait until the sibling would nod, or until the student can say that version. Then a better question: “What’s a second place we could look — the chore list, last night’s pick?” Then look. If needed, name a better reason: “Doing the dishes is a reason. It is not the only reason. The list also shows who picked yesterday.” Correct the straw. Do not crush the talk. Some reasons are better than others. You may drop a weak one.⁹⁸ “Never correct the student” is not this book’s rule.

Journal of Research in Science Teaching, 1974) are science class. Do not mash Rowe and Stahl as if they were one homeschool trial. None was opened for this book.

⁹⁸Deanna Kuhn and Wadiya Udell, “The Development of Argument Skills,” *Child Development* 74, no. 5 (2003): 1245–1260. Reasons on cards; some are better; you may drop a weak one — that is correction. Dense peer dialogue was the more effective arm of that design. A family of three is not that design. “Never correct the student” is not this book’s rule.

For the student

The house is already full of claims. A recipe. A label. A fridge graph. A sibling. A text. Your job is not to win dinner. Your job is to change one thing and look, or to say theirs so they would nod, and then check.

Tiny worked example. Two cups. Same water, same tea, same starting time. One bag steeped two minutes longer. That is the one thing you changed. You look. One cup is darker. You can say what you saw. You cannot say the darker cup “wanted” to be darker and have that count as the look. If your sibling says the dishes should pick the show, you say it back in the strongest way: they think it is fair tonight because they did the dishes. Then you look at the list.

Two tries.

1. Two packages already in the house. What does the front say? What does the side table say? What is missing? How could you check without turning dinner into a sermon?
2. Someone texts, or says, “we always start with the same five.” Say it back so they would nod. Then name one second place you could look — last week’s written list, a box score, a memory you can check.

Explain it back. Tell someone at the table, in your own words, what a one-change check is. Then, separately, tell them what a steelman is. Point at the pans or the paper boxes and say how you know.

Challenge. Fill three boxes on scrap paper: Claim / Reason / Objection. If a reason is weak, drop it or repair it. That is allowed. It is not mean. Then write one dated line: what you claimed, what you looked at, what you think now.

You are allowed to wait. You are allowed to be wrong and then look. You write, or you say, the new sentence. A tool does not look in the pan for you. A fluent “because I wanted it” is not a check. Leave this page and look at one other thing.

If it isn’t clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent. None of them is a reason to wait for a birthday.

1. **Two things keep changing, and the claim still sounds sure.**

The one-change rule is not yet in the mouth. Next move: you set both versions on the table — a clean pair and a messy pair. “Can we tell for sure?” Wait. Smaller materials: two folds of paper, or two cups, that really differ in one named way. Slow down. Stay on soak or steep until they can catch the extra change. Go ahead to two-label and steelman once “what is the one thing we changed?” is easy. A human tutor is optional here; the materials are cheap. Bring someone in if several weeks of short sittings still end in a two-things claim *and* the hour has become a fight.

2. Every reason is a hope, a “wanted it more,” or a mash of how and why.

A look was asked for; a story arrived. Next move: point at the object. “What did you see? How do you know it happened?” Keep that question apart from “why might it have?” Name, if needed, a better reason. Hearing is not endorsing. Correcting the reason is not shutting the student down. Stay on labels and cups, where the look is cheap. Go ahead to a sibling steelman once a wish is hearable as a wish. A tutor is useful if the sitting is stuck on stories after you have pointed at the object, consistently, and the student is distressed — distress from a well-posed look is effort; distress from a parent who has taken the pan is a different problem. Separate them.

3. Steelman feels like losing, or the paper map stays empty.

“If I say theirs, I lose.” Or three boxes on the fridge, never filled. Next move: practice on a cooler claim. Model one fair sentence. “Is that fair?” Wait until they would nod. Fill one box tonight. Paper first; no login. This is not a personality transplant into being “the nice one.” It is one fair version, then a check. Slow down the hot sibling sitting until a cooler claim can carry the move. Go ahead to the store cousin once the kitchen check is a habit. A tutor is not the first move; the object is.

When to slow down. One-change not yet named. Wish still the default answer to “how do you know?” Steelman still heard as surrender. Fight at the table. Those are brakes. Age is not a brake.

When to go ahead. They can name the one change. They can look at two labels and change the sentence. They can say one fair version of someone else’s claim. Then the walk, the store, and team practice in the next chapter have somewhere to sit.

When to get a human tutor. You cannot yet hear a wish-as-reason or a straw-as-

steelman, even after the five-minute warm-up. Or the student has weeks of short sittings, and the unaided sentence is still a hope with no look. Or the hour is a fight. A tutor is a release valve, not a failure of the kitchen. Keep yourself as the person who can still hear “because we wanted it more.”

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The student talks to you. The student looks at the pans, the labels, the list. You may, on your account, after they have tried, ask a tool to explain this page to you from a named book page, to offer extra questions you will vet, to write a short SCRIPT for *you* to say, to give a hint after an attempt, or to diagnose a reason they already gave. You hear the diagnosis and you decide. Throw out any extra question that imports a live controversy, a secret, a pretend expert, or a nutrition sermon. A tool does not write the student’s steelman for them to paste as theirs.

The student does not sit alone with an open chat. A tool does not invent what the recipe yielded, whether the shop is closed, or who did the dishes. A fluent reason from a machine is performance, not the student’s check. Detectors are not a grade. There is no certificate of thinking to print. Paper map before any app. An argument-mapping site is a later optional, on your account, after paper has done the work — and still not a course name on a record.

Ages 11–12 (under 13). Scripts and parent–child talk. Not live open chat. No child account on a general-purpose chat. Default: no child login. Paper is the map.

Ages 13–15. Turning 13 is a legal hinge, not a thinking birthday. Still no unsupervised chatbot as the only partner. A labelled SCRIPT after the student tried remains the default. You hold the account.

A thinking tool is not a secret friend.

What “done enough” looks like

Done enough is skill, not a birthday, and not a course called Lab Thinking 1 or Argument Mapping I. If a log needs a science line, “two cups / one-change / looked”

is a science line. If the work was a short written reason about two recipes, the title is still **English** or **Science**. It is not Critical Thinking I.

Checklist before moving on.

- Names the one thing that changed, and at least one thing that stayed the same.
- Looks, then says what they saw, not only what they hoped.
- Hears a wish or a “wanted it more” and, with a question, gets to a look.
- Turns two labels and treats the front as a word someone wrote.
- Separates, at least when you cue it, “how do we know it happened?” from “why might it have?”
- Says one fair version of someone else’s claim so they would nod, then names a check.
- Fills three boxes on paper before any app.
- Changes the sentence when the look goes the other way, without treating that as losing.
- On a store cousin, can use the cue “this is like the two recipes.”

What can still be thin: unaided far transfer to a new kind of problem with no cue; holding dual focus without a prompt; a paragraph instead of a page. Those can wait. They are not a window that closed.

A parent who felt rusty should be able to say, after this chapter: I understand one-change as scientific reasoning. I know what to say tomorrow. I know what a why-story offered as a look sounds like, and what a straw offered as a steelman sounds like. The student still looks. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can say the other side fairly. I can change my mind when we look.

Chapter 7

Outside the home

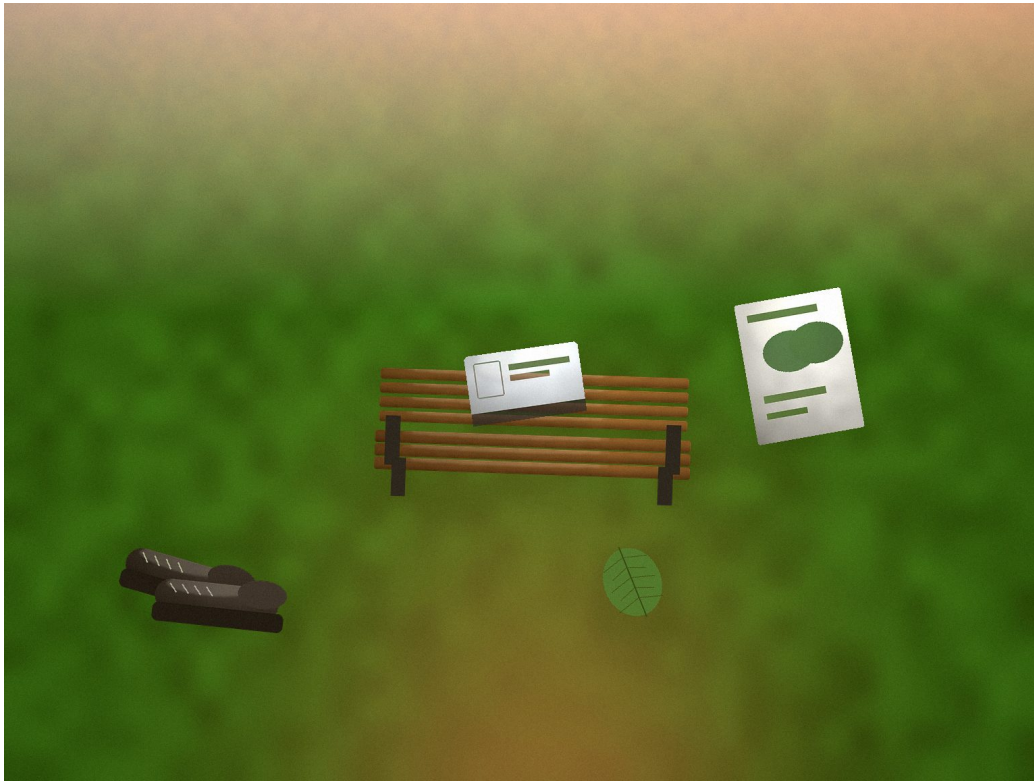


Figure 15: A park bench, a folded forecast printout, a generic store shelf of unbranded boxes, a small stack of unmarked library books, an empty ball and a scorecard

Why this matters

What do you notice?

What do you mean, *always*?

Those two questions unlock a walk you were taking anyway. A store you were already in. A library card already in a pocket. A museum as looking at one object. Team practice as an ordinary game, after, not during. Outside the home is not a purchased identity. It is not a franchise. It is the same moves as the kitchen — notice, name, a second source, a fair version of theirs — on a larger floor.

The walk is already happening and needs no catalogue. Forecast versus sky. A package in an aisle as a sentence on cardboard, not a sermon about food. A library hour as research, not storytime: two books, named, and what would change your mind. A museum as **one** object, one label, one question. A teammate's "we always start with X" versus last week's written list. Safe stakes. Weather as weather. A game as a game.

A walk is none of the outdoor programmes people sometimes mash into "thinking outside." Forest School is a named school treatment. A completed effectiveness trial of Forest School as critical thinking is not a finding this book can copy, and a parent walk is not that treatment.⁹⁹ Attention-restoration studies are about attention and symptoms. They are not this chapter. The honest out-of-home type is: notice, name, wonder, check if checking is cheap and safe. Noticing is not foraging school.

The library is the opened low-cost path. In 2016, 66 percent of homeschool households used the library as a source of curriculum and books — 61 percent in the sixth-to-eighth-grade band, 58 percent in ninth-to-twelfth.¹⁰⁰ A later federal table found fewer homeschool-row library visits in the past month than that older "source of books" number; all-student visits in the same age bands were lower

⁹⁹Forest School is a named outdoor-education treatment. No completed effectiveness randomized trial of Forest School as critical thinking was opened for this book. A parent walk is not that treatment and is not filed here as a critical-thinking method with a trial behind it. Access date for sources in these notes: 1 September 2026.

¹⁰⁰National Center for Education Statistics, *Homeschooling in the United States: Results from the 2012 and 2016 Parent and Family Involvement in Education Surveys (PFI-NHES:2012 and 2016)*, NCES 2020-001, Table 6. Library as a source of curriculum and books: 66 percent of homeschool households in 2016; 6th–8th 61 percent; 9th–12th 58 percent. 2023 subject tables **UNVERIFIED** this fetch.

still.¹⁰¹ That is a reminder to **go on purpose**. A public library’s mission language includes exploratory conversation and challenging assumptions; that is a mission, not a trial of a thinking kit.¹⁰² Librarians do not stand in for you on what your student reads. You still pick the books and the prompt.

A branded weekly philosophy hour is a purchase, a training, or a pin. In a large English effectiveness trial of Philosophy for Children — 198 schools, highest security rating — the result was **0 months** extra progress on reading and maths.¹⁰³ Even schools with trainers did not all keep the hour. Short and repeatable beats a forty-minute franchise you will not keep. A library card is already in many pockets.

That is worth the struggle because the world already offers claims. A grey sky versus a forecast. A sign. A teammate’s *always*. A label. A caption on a museum card. Each one can be a wish, a memory, or a look. The parent who can carry one named question on an errand they were running anyway can teach this week. The student who can stop, name one thing they notice, say how they know, and name one other thing it could be — or, after a game, name one second place to look — has practiced deciding what to believe on a domain under their feet.

¹⁰¹NCES, NHES:2023 / NCES 2024-113, Table A-5: homeschool-row library visit in the past month 53 percent; all-student 6th–8th 24 percent; 9th–12th 19 percent. A visit-in-the-past-month item is not the same measure as Table 6’s “source of curriculum and books.” Use both as a reminder to go on purpose, not as a single rate.

¹⁰²New York Public Library mission language includes exploratory conversations and challenging assumptions — mission copy, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights: parents decide for their own children; librarians do not act in loco parentis. This chapter uses those as role facts. It does not treat mission language as an effect size.

¹⁰³Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01; free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Year 6 is about age 10–11 — the floor of this book’s band, not a U.S. eighth-grade trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years (Going for Gold / SAPERE model). An IAPC manual is a purchase. National High School Ethics Bowl listed a 2025–26 school fee of \$175 / \$250 on pages opened for this book. A library card is the opened low-cost path. Whenever Philosophy for Children is named in this book, copy **0 months**. Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF P4C efficacy trial, 2015, ERIC ED581147: 48 schools; reading +0.12 (~2 months), maths +0.10 (~2 months) — the efficacy finding that did not replicate at effectiveness scale.

This week you can learn how a walk they were taking anyway can carry one named question, and how to leave a recap or a teammate's "always" for a box score or a written list. Today the student can stop on a walk, name one thing they notice, say how they know, and name one other thing it could be; or, after a game, name one second place to look.

For the parent: understand it yourself

You do not need to be a naturalist, a curator, or a coach. You do need to hear "because I want it to rain" as a wish, not a look at the sky, and "we always start with X" as a sentence that still has last week's list.

Everyday picture. You are already walking to the corner. A grey sky. A forecast on a phone in your pocket, or a memory of this morning's page. "What do you notice?" If you fill the walk with a lecture on weather words, the student will hunt for the word you want. If you ask what they notice, wait, and look at the sky, then at the forecast, they have two sources. The walk stays a walk. Ten extra minutes is plenty.

Precise picture. *Notice* is the first look: what is there. *Name* is a word you already have, or an honest "I don't know yet." *Wonder* is a question that could come out otherwise: what else could make this sky? *Check*, if it is cheap and safe: look at the forecast; look at the sky; come back after rain; read the sign; walk to the desk; open a second book. Knowledge first. A maxim about "thinking like a scientist" without the sky will not implement.¹⁰⁴

The store is the same shape with cardboard. What does this package *say*? What does that word mean? What is missing? How could we check? Three to eight minutes in a shop you were in. One or two packages. Aisle courtesy. The box is a speaker. Speakers can be incomplete. This is not a nutrition hour.

The library is a free research hour. At eleven to fifteen the job is two sources, named, and what would change your mind — not a picture-book sofa, unless an eleven-year-old still wants one book as a warm-up. Why these two books: contents, index, date, who wrote them. Then the talk you already know. If the dis-

¹⁰⁴Daniel T. Willingham, "Critical Thinking: Why Is It So Hard to Teach?," *American Educator*, Summer 2007; Willingham, "How to Teach Critical Thinking," NSW Department of Education, 2019. Maxims without knowledge will not implement; near practice on a sky does not, by itself, install unaided judgment on an unfamiliar later page. Cue the similarity ("this is like the aisle").

play is a live fight, walk to a different bay. You still pick the prompt. In New York, grades 7–8 mention library skills on a regular basis; that is a thicker-state reminder that libraries exist, not a thinking course and not a reason to invent Critical Thinking I.¹⁰⁵

The museum is looking, not a franchise. One object. One label. One question. The label is a claim. What can you see? What would you still need to know? “How would we know if the date is right?” only if the student has some date-knowledge. Fatigue is real. One object beats a day of rooms.

Team practice is an ordinary game. The game you watched. Who should be captain under named criteria. “Always” versus the box score or last week’s written starting five. After, not during. Not a character-through-sports unit. Not a culture-war about sport. A sideline interrogation is not a thinking hour.

The bus stop is two-source in a queue: a posted time versus the clock. Public quiet. Then you get on.

Wrong answers you should be able to hear

1. Hunting for the “right” nature word. You asked what they notice. They stall, searching for the vocabulary they think you want.

What it usually means. The question was heard as recitation. Wait-time 1 was zero, or the adult filled the walk with a lecture.

What to say. “What do you notice?” Wait. Point at the sky, the puddle, the sign. The word can come later. The look cannot.

2. A friend’s sentence, a forecast, or a teammate’s *always* as magic proof. “Maya said closed.” “The app said rain.” “We always start with Jordan.”

What it usually means. Testimony did the work of a look. Take the speaker seriously. Still leave the sentence for a door, a sky, or a list.

What to say. “What do you mean, *always*? What’s a second place we could look?” Then look. Repeat the check, not the rumor in a singsong.

¹⁰⁵New York, 8 NYCRR 100.10 and grades 7–8 required courses: library skills on a regular basis. A statutory neighbor, not a critical-thinking course and not a transcript title. None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course.

3. A lecture to a stranger, a shop, or a coach. The aisle became a performance. The sideline became a hearing.

What it usually means. Noticing was confused with a gotcha. Courtesy left the sitting.

What to say. Stop. Quiet. One package, or wait until after the game. The thinking hour is yours. It is not a stranger's.

4. The museum as a day of rooms, or the library as a kit. Twelve galleries. A philosophy franchise pulled off a shelf.

What it usually means. Coverage ate looking. A brand ate the prompt.

What to say. One object. Two books you picked. One question. Then go home.

5. Captain as a culture-war, or “always” as a personality test. The sitting became who is allowed to be upset about sport.

What it usually means. The ordinary game left the table. Unsafe stakes arrived.

What to say. Named criteria: who starts, who speaks to the official, who organizes. Last week's actual jobs. Then look. If it is still hot, postpone.

Five-minute parent warm-up

Before the walk, the shop, or the library, no student required in the room:

1. Write tonight's opening: “What do you notice?” or, after practice, “What do you mean, *always*?” Wait a slow three out loud. Three seconds is a convention from classroom think-time, not a homeschool study.¹⁰⁶
2. Name the second source you will actually have: forecast, sky, side of a box, second book, label on an object, last week's list, posted bus time. If you cannot name it, pick a smaller errand.
3. Write one fluent fake you expect — “the app said,” “we always,” “the label can't be wrong” — and the check you will point at.

If those three are fluent, you can hear a memory offered as a look, and an *always* that still has a list. That is the job. The student still talks. The sky still sits there.

¹⁰⁶Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament. Mary Budd Rowe's wait-time papers (1972/1974) are science class. Do not mash Rowe and Stahl as if they were one homeschool trial.

How to teach it this week

Use the thinking-hour shape. Fill it with a walk, a store, two books, one object, or an after-practice claim. Stop while it is still a sitting. An errand you were running anyway is enough. You do not need a new outing for this chapter.

Warm-up (2–4 minutes). Yesterday’s kitchen one-change or yesterday’s rainfall picture, from memory. “What did we change? Where did the axis start?” Then: “Today we notice, and we look at one other thing that is not the house.”

Short model (5–8 minutes), on a walk you were taking.

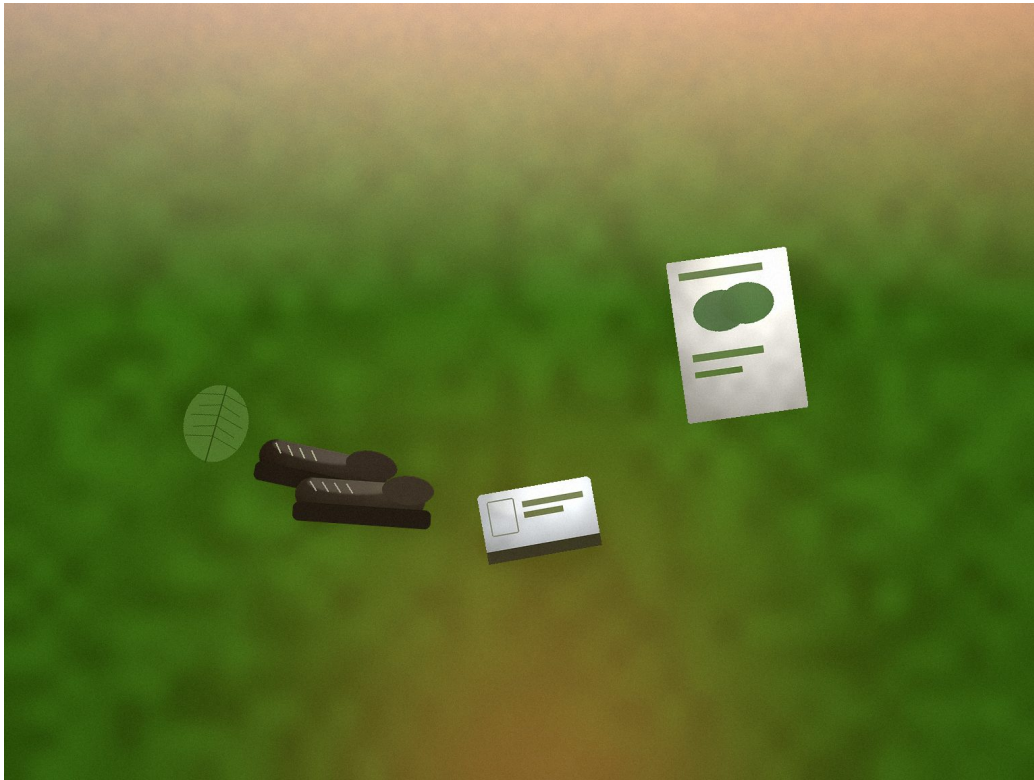


Figure 16: A folded forecast beside a window or a path, grey sky, a generic unbranded sign

You stop. You ask what they notice. You wait. You look at the sky. You open the forecast if you have one. You say what you saw, and what the forecast does not tell

you. Then you show the *wrong* cousin on purpose: filling the walk with weather words before anyone has looked. “Can we tell from the vocabulary?” Wait. Then stop talking sooner than feels polite.

Exact wording you can steal.

On the walk: “What do you notice?”

On a claim: “What do you mean, *always*?”

On a reason: “How do you know?”

On a second source: “What’s a second place we could look?”

On a sign or a label: “What does this actually say? What’s missing?”

On a steelman: “What’s the strongest version of what they mean?”

On a museum card: “The label is a claim. What can you see? What would you still need?”

On mind-change: “You thought X. We looked. You can say the new thing. That is not losing.”

Student attempt. After the model, they run the next stop — a puddle, a shop label, a desk hours poster — with you beside them, not narrating. Product: one notice, one “how I know,” one other thing it could be, spoken or one dated line later. You wait. You do not finish the nature word. You do not lecture the aisle.

One good question. After the attempt: “If we only had the forecast, and not the sky, what would we still not know?” The student generates the why.

Mixed practice. One walk notice. One store turn. One after-practice *always*. Mix, so the move is not glued to weather.

Exit ticket (2–5 minutes, unaided), often in the car. “What did you notice? How do you know? What’s a second place we could look?” Spoken is enough. At fourteen to fifteen, one dated line: place, claim, two sources named. Tool closed.

How to fade help. You notice and name the second source → they notice while you name the check → they name both → they stop on a walk without your prompt. When they can leave an *always* for a list without your cue, put the scaffold away. Bring it back when a new place arrives — a museum card, a bus poster, a different sport.

When to stop talking. After one model and one question. You hold the key: is there a notice, a second source, a wait? You do not become a tour guide. The walk stays a walk. The game stays a game.

Age-band moves

11–13. Keep the check near. Sky versus forecast. One package. Two books on one safe topic they already somewhat know. One museum object. After practice, one *always* versus a list you can actually produce. Speech is talk, not a research paper. First-order is enough: I thought it would rain; we looked at the sky; the sky was lighter than the forecast. A nature-word hunt will still arrive. Hear it. Point at the thing. You may name a better reason if the sitting needs one.

14–15. Same moves, slightly heavier grain. They can name two sources before you prompt. They can steelman a teammate’s *always* and then open the list. They can treat a museum label as a claim and say what a second source would need to be. They can write a short reason plus the check after two library books. They still skip the look, some of the time. They still need the object. A fluent recap of the gallery text is not a check. Far transfer to a later civic page is an open question. Knowledge of that later domain will still be required.¹⁰⁷

Placement is by skill, not birthday. A fifteen-year-old who still hunts for your word is still in the 11–13 band of this chapter. An eleven-year-old who leaves “always” for a list is already practicing the 14–15 catch. A publisher’s “grade 7 outdoor thinking workbook” is a scope, not a legal grade, and not a transcript line.

Practice that actually builds learning

Named try-its. Time, materials, safety, the fun, the skill. The centre of this chapter is outside. Name the kitchen cousin so the move can travel home.

Try-it 1 — Walk noticing plus forecast check

Time. 5–20 minutes of a walk you were taking anyway.

¹⁰⁷Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; Willingham, “How to Teach Critical Thinking,” NSW Department of Education, 2019. Maxims without knowledge will not implement; near practice on a sky does not, by itself, install unaided judgment on an unfamiliar later page. Cue the similarity (“this is like the aisle”).

Materials. Eyes. Optional: this morning's forecast, on paper or on a parent phone.

Safety. Roads, water, unknown plants, other people's dogs. Noticing is not foraging school. You do not taste unknown things. You do not lecture a stranger's child. Weather as weather, not a policy seminar.

The fun. Stopping. Being right or wrong about rain, together, without a score.

The skill. Two-source (forecast versus sky). Notice. Criteria. Not Forest School.

How to run it. Stop. "What do you notice?" Wait. Look at the sky. Open the forecast if you have one. "How do you know? What else could be true? What's a second place we could look?" If the two disagree, that is the sitting. Last thoughts in the last block: "I used to think... now I think..."

11–13. One stop. You hold the forecast.

14–15. They name what the forecast does not tell you (this street, this hour, wind). Cue: "this is like two labels."

Try-it 2 — Store-label looking

Time. 3–8 minutes.

Materials. One or two packages in a shop you were in.

Safety. Aisle courtesy. No lecture to strangers. Do not eat from an open demo. Do not shoplift a "test." No body talk. No gotcha against a shop or a neighbour. Safe examples only: serving size, a number on the front versus the side, "family" as a word.

The fun. Turning the box. Then buying what you came to buy.

The skill. Claim versus table. Two-source. Missing information.

How to run it. Quiet. Front versus side, or two similar packages. "What does this actually say? What's missing? How could we check at home?" Then keep moving.

11–13. One package. You hold the basket.

14–15. Two packages. They name a second source that is not the front. Cue: "this is like the two recipes."

Try-it 3 — Library two-book

Time. 10–20 minutes in the library, plus, if you want, the same two books on the table tomorrow.

Materials. Two books on one safe topic the student already somewhat knows: a storm, an animal, how a game’s scoring works, a historical craft — not a live fight. Library card. Optional: a dated notebook.

Safety. You pick the bay if the display is a live controversy. Public quiet. You do not lecture other families. Librarians do not act in place of you; you decide for your own student.¹⁰⁸

The fun. Finding two voices on one thing, then naming what would change your mind.

The skill. Two-source. Steelman the blurb. How could we check. Research hour, not storytime.

How to run it. Pick a question small enough to stand in a stack: “Do these two books agree about how glaciers move?” or “Do they give the same date for this storm?” Open both. Name them (title, call number or shelf). Say what would change your mind. In-home cousin tomorrow: the same two books on the table, plus a one-page reason. Title of the record: still English or Science.

11–13. You help find the second book. They name one agreement or one difference.

14–15. They find the second book. They name who would be in a position to know. They write the short reason plus the check.

Try-it 4 — Museum as looking

Time. 10–20 minutes at **one** object, inside a visit you were already making.

Materials. The object and its label. Optional: a pencil and a card for one sentence.

¹⁰⁸New York Public Library mission language includes exploratory conversations and challenging assumptions — mission copy, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights: parents decide for their own children; librarians do not act in loco parentis. This chapter uses those as role facts. It does not treat mission language as an effect size.

Safety. Hands off when the house rules say so. Crowds. Fatigue. One object beats twelve rooms. You do not perform a lecture for the gallery.

The fun. The thing itself.

The skill. Label as a claim. What you'd need in a second source. "How would we know if the date is right?" only if the student has some date-knowledge.

How to run it. Stop at one thing. "What do you notice?" Wait. Read the label. "What does this actually say? What can you see without the label? What would you still need?" Then you may walk on, without turning the rest of the visit into a quiz.

11–13. One object. One sentence of what they see versus what the label claims.

14–15. They name a second source (another label in the room, a catalogue, a book tomorrow). They refuse a beyond they do not have.

Try-it 5 — Team-practice claim, after not during

Time. 3–10 minutes, after practice or after a game you watched.

Materials. Box score, or memory of *this* game, or last week's written starting five if you have it.

Safety. No sideline interrogation. No gotcha against a coach. No humiliation of a teammate. Ordinary game, ordinary claim. Not a culture-war about sport. If the stakes are hot, postpone.

The fun. "Always?" versus last week's list. Who should be captain under named criteria.

The skill. Meaning of *always*. Counterexample. Steelman. Graph if a table exists. Take the teammate seriously. Still leave the sentence for the list.

How to run it. After. "What do you mean, *always*?" Wait. "What's the strongest version of what they mean?" Then: "What's a second place we could look?" Open the list or the box score. If they later say "but they said always," repeat the list, not the rumor in a singsong. Captain, if it actually comes up: name the criteria (start, speak to the official, organize), then look at last week's actual jobs.

11–13. One *always*. One counterexample you can actually point at.

14–15. Steelman, then the list, then a dated line if they want one. Cue: “this is like the rainfall table.”

Try-it 6 — Bus or waiting two-source

Time. 2–5 minutes.

Materials. A posted time versus the clock. Public quiet.

Safety. Watch the road and the vehicle. The sitting is not a confrontation with a driver.

The fun. Being early, late, or on time, with two numbers.

The skill. Claim versus look.

How to run it. “What does the sign say? What does the clock say?” If they disagree, that is the sitting. Then you get on.

11–13. One pair of numbers.

14–15. They name what the poster does not tell you (traffic, a delay not posted). Cue: “this is like the library-hours poster.”

Try-it 7 — Kitchen cousin: two-label / fridge graph

Time. 3–10 minutes at home, so the out-of-home move has a place to land.

Materials. Two packages, or the fridge graph, or the two library books on the table tomorrow.

Safety. Same as Chapter 6. No food sermon. Do not do the homework for them.

The fun. “This is like the aisle.” “This is like the sky.”

The skill. Transfer by cue, not by magic. Near is the honest hope.¹⁰⁹

How to run it. One question from the talk box. Then stop.

¹⁰⁹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; Willingham, “How to Teach Critical Thinking,” NSW Department of Education, 2019. Maxims without knowledge will not implement; near practice on a sky does not, by itself, install unaided judgment on an unfamiliar later page. Cue the similarity (“this is like the aisle”).

Talk box

Exact opening question. “What do you notice?” or, after practice, “What do you mean, *always*?”

Not: “What should you notice?” Not: “What is the vocabulary word?” The question is authentic. It is about the sky, the sign, or the claim in front of you.

Follow-ups (pick three to five, not all at once).

1. Meaning: “What do you mean, *always*? What do you mean, *closed*?”
2. Reason: “How do you know?”
3. Alternative or counterexample: “What else could be true? Always — can we think of a time it wasn’t?”
4. Check or second source: “What’s a second place we could look? What does the sign (or the box score, or the label) actually say?”
5. Steelman or revise: “What’s the strongest version of what they mean? You may change your mind. That is not losing.”

How to wait. After you ask, a slow three is a convention, not a sacrament.¹¹⁰ After they stop, wait again. If they are mid-reason, do not cut them off. Look at the sky, the poster, or the window, not at the student, if the silence is hard. At eleven to fifteen the shrug often looks like refusal. Do not rescue it.

What a stuck silence usually means. They are hunting for the “right” nature word. Wait-time 1 was zero. The adult filled the walk with a lecture. They think a captain conversation is a culture-war. They offered a forecast as if it were the sky. They think “critical” means finding fault with a shop or a coach. The parent’s job is to pose, wait, and point back at the object — not to fill the silence with the right nature word, and not to turn the path into a fight.

One incorrect example to diagnose

A fluent recap with no box score, offered as an after-practice sitting.

Teammate, later quoted at the table: “We always start with Jordan. That’s just how it is.”

¹¹⁰Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention, not a sacrament. Mary Budd Rowe’s wait-time papers (1972/1974) are science class. Do not mash Rowe and Stahl as if they were one homeschool trial.

Student: “Yeah, we always do. You can tell.”

What went wrong. *Always* did the work of a list. A fluent agreement did the work of a check. Testimony was taken seriously — good — and then never left for a look.

What to do. Hear it. Steelman: “The strongest version of what they mean is: Jordan has started recently, and people talk as if that will continue.” Then: “What do you mean, *always*? What’s a second place we could look?” Open last week’s written five, or the box score, or a memory you can check (“who started on Tuesday?”). If the list shows a counterexample, name it. If it does not, the word *always* may be doing less harm — and you still looked. Repeat the list later, not “always, always, always” as the thing to knock down. Correct the reason. Do not crush the talk.

For the student

Outside is already full of claims. A sky. A forecast. A box. Two books. A label next to a thing in a museum. A teammate’s *always*. Your job is not to tour. Your job is to notice, say how you know, and name one other place to look.

Tiny worked example. This morning’s page said rain. You walk. The sky is lighter than the page. You notice that. You say how you know: you can see brightness at the edge of the cloud. You name one other thing it could be: the rain already passed, or the forecast was for a different hour. You have two sources. You may change your mind about bringing the heavy coat.

Two tries.

1. On a walk you are already taking, stop. What do you notice? How do you know? What else could it be? If you have a forecast, what does it say that the sky does not, or the other way around?
2. After practice, someone says *always*. Say the strongest fair version of what they mean. Then name a second place you could look — last week’s list, a box score, a memory you can check.

Explain it back. Tell someone in the car, in your own words, what “what do you notice?” is asking. Then tell them what “what do you mean, *always*?” is asking. Point at the sky, the poster, or the list.

Challenge. Two library books on one safe question. Name both. Say one thing they agree on, or one thing they do not. Say what would change your mind. Write a dated line if you can: titles, question, reason, check.

You are allowed to wait. You are allowed to be wrong and then look. You write, or you say, the new sentence. A tool does not look at the sky for you. A fluent “the forecast said” is not a check. Leave this page and look at one other thing.

If it isn’t clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent. None of them is a reason to wait for a birthday.

1. Every walk is a vocabulary hunt, or a lecture you filled.

Notice never happened. Next move: shorter stop. One thing. “What do you notice?” Wait a slow three while you look at the sky, not at them. No new words until they have pointed. Stay on forecast versus sky until a notice is easy. Go ahead to store and library once notice is a habit. A human tutor is optional here; the walk is free. Bring someone in if several weeks of short stops still end in a hunt for your word *and* the hour has become a fight.

2. Testimony is treated as the look: the app, the friend, the teammate’s *always*, the museum card.

A second source was asked for; a fluent speaker arrived. Next move: leave this sentence and look at one other thing. Sky. Side of the box. Second book. Last week’s list. Take the speaker seriously. Still look. Stay on cheap checks. Go ahead to steelman-after-practice once a forecast can be left for a sky. A tutor is useful if the sitting is stuck on “they said” after you have pointed at the object, consistently, and the student is distressed — distress from a well-posed look is effort; distress from a parent who has taken the game is a different problem. Separate them.

3. The outing became a gotcha, a coverage march, or a culture-war.

Aisle performance. Twelve galleries. Captain as a fight about sport itself. Next move: stop. Smaller errand. One object. After, not during. Named criteria, or postpone. Courtesy is part of the skill. Slow down until the sitting is quiet again. Go ahead to the kitchen cousin once an ordinary walk can carry one question. A tutor is not the first move; the object is. A branded outdoor hour is not the missing

piece.¹¹¹

When to slow down. Notice not yet named. *Always* still the default with no list. Fight on the path or the sideline. Those are brakes. Age is not a brake.

When to go ahead. They can notice, name a second source, and leave an *always* for a list when you cue it. Then approaching disagreement in the next chapter has somewhere to sit — the same objects, a sequence.

When to get a human tutor. You cannot yet hear a testimony-as-check, even after the five-minute warm-up. Or the student has weeks of short sittings, and the unaided sentence is still “the app said” with no sky. Or the hour is a fight. A tutor is a release valve, not a failure of the walk. Keep yourself as the person who can still hear “we always.”

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The student talks to you. The student looks at the sky, the box, the two books, the object, the list. You may, on your account, after they have tried, ask a tool to explain this page to you from a named book page, to offer extra questions you will vet, to write a short SCRIPT for *you* to say, to give a hint after an attempt, or to diagnose a reason they already gave. You hear the diagnosis and you decide. Throw out any extra question that imports a live controversy, a secret, a pretend expert, a lecture to a stranger, or a culture-war about sport. A tool does not invent whether the shop is closed, what the rainfall was, who started last week, or what a museum label said.

The student does not sit alone with an open chat. A fluent reason from a machine is performance, not the student’s check. Detectors are not a grade. There is no certificate of thinking to print. A mapping app does not replace two books on a table. Paper and the shelf come first.

¹¹¹Forest School is a named outdoor-education treatment. No completed effectiveness randomized trial of Forest School as critical thinking was opened for this book. A parent walk is not that treatment and is not filed here as a critical-thinking method with a trial behind it. Access date for sources in these notes: 1 September 2026.

Ages 11–12 (under 13). Scripts and parent–child talk. Not live open chat. No child account on a general-purpose chat. Default: no child login.

Ages 13–15. Turning 13 is a legal hinge, not a thinking birthday. Still no unsupervised chatbot as the only partner. A labelled SCRIPT after the student tried remains the default. You hold the account.

A thinking tool is not a secret friend. It is not a walking partner.

What “done enough” looks like

Done enough is skill, not a birthday, and not a course called Outdoor Philosophy 1. If a log needs a science line, “forecast / sky / looked” is a science line. If the work was two library books and a short reason, the title is still **English** or **Science**, and in New York grades 7–8 the statutory neighbor may be library skills — still not a thinking title.¹¹² It is not Critical Thinking I.

Checklist before moving on.

- Stops on a walk and names one thing they notice, without hunting for your word first.
- Leaves a forecast, a friend’s sentence, or a museum label for one other look.
- Turns a package in a shop you were in, quietly, and names what is missing.
- Names two library sources and says what would change their mind.
- Looks at one museum object and treats the label as a claim.
- After practice, asks what *always* means and points at a list or a box score.
- Changes the sentence when the sky or the list goes the other way, without treating that as losing.
- On the kitchen cousin, can use the cue “this is like the aisle” or “this is like the sky.”

What can still be thin: unaided far transfer to an unfamiliar later page with no cue; a research paper instead of two books; holding a captain conversation when the stakes are hot. Those can wait. They are not a window that closed. A path through ordinary challenges is the promise. A diploma is not.

¹¹²New York, 8 NYCRR 100.10 and grades 7–8 required courses: library skills on a regular basis. A statutory neighbor, not a critical-thinking course and not a transcript title. None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course.

A parent who felt rusty should be able to say, after this chapter: I know how a walk we were taking anyway can carry one named question. I know how to leave a recap or an *always* for a list. The student still looks. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can say how I know. I can name a second place to look.

Chapter 8

Approaching disagreement

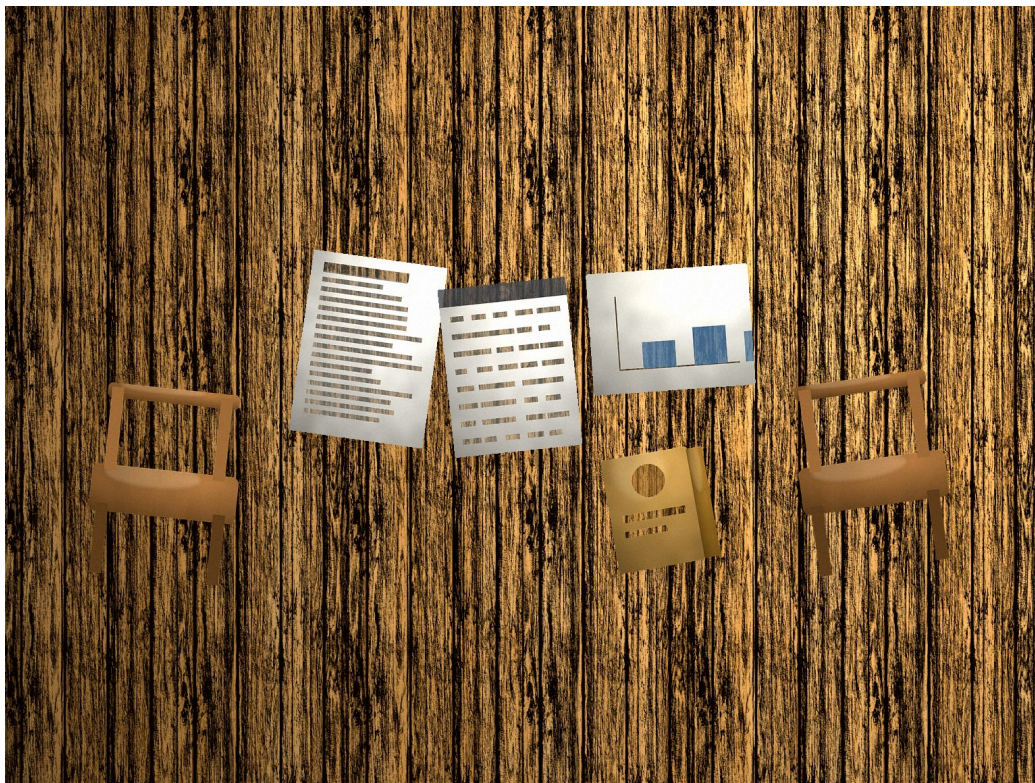


Figure 17: Two empty chairs at a kitchen table, a recap page and a box score with unreadable league marks, a rainfall graph, a generic box with a blank “best” badge

Why this matters

Say yours, then say theirs.

That sentence unlocks disagreement at eleven to fifteen. Not a debate club. Not a current-events hour. Not a lesson on who is allowed to be upset. A sequence, practiced on a recap versus a box score, two forecasts, a review versus a spec sheet, who should be captain, a rainfall graph, “the article said” a date or a storm, a teammate’s “we always start with X.” You listen. You ask what they mean. You ask for a reason. You open a second source. You wait. You may change your mind. You say the strongest fair version of theirs. A fluent sentence is not a check.

The civic chapters of an older book are the wrong grain for this table. The five-to-ten swing is the wrong object. What you can teach is a sequence on stakes the student actually knows. Dual focus — your side and theirs — is promptable. It is not the default. Own-side talk is the default.¹¹³ Copy the *shape* of classroom argumentation: a counter, evidence, a fair version of the other side. Copy not the topics those classrooms sometimes used. This chapter stays with ordinary adolescent stakes.

Talk can change the talk in the room without transferring to a new essay about an unseen story.¹¹⁴ A large English effectiveness trial of Philosophy for Children — 198 schools, highest security rating — found **0 months** extra progress on reading

¹¹³Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): 135–153. Seventh- and eighth-graders produce argumentative discourse and are more own-side, less strategic, than young adults. Deanna Kuhn and Wadiya Udell, “The Development of Argument Skills,” *Child Development* 74, no. 5 (2003): 1245–1260; Kuhn and Udell, “Coordinating Own and Other Perspectives in Argument,” *Thinking & Reasoning* 13, no. 2 (2007): 90–104: dual focus is promptable, not default. Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Vehicle for Developing Young Adolescents’ Thinking,” *Psychological Science* 22, no. 5 (2011): 545–552: dual-perspective growth in a classroom design. This chapter copies *shape* (counter, evidence, steelman), not topics. Capital punishment, abortion, gun control, and related live-fight stimuli from those papers stay out of the teaching examples. Access date for sources in these notes: 1 September 2026. Page-level quotations of Dennett / Rapoport steelman language **UNVERIFIED** this fetch; the 11–12 version in the body is one sentence, the 14–15 version can be two.

¹¹⁴Alina Reznitskaya, Monica Glina, Brian Carolan, and colleagues, “Examining Transfer Effects from Dialogic Discussions to New Tasks and Contexts,” *Contemporary Educational Psychology* 37, no. 3 (2012): 288–306. Twelve fifth-grade classrooms; discourse became more dialogic; no statistically significant transfer to interview, persuasive essay, or recall of argumentative text. Grade 5 is the floor of this book’s band. Cell means **UNVERIFIED** this fetch. Dialogue may still be worth ten minutes as dialogue.

and maths, and no significant move on pupil-survey items about explaining ideas and working with different opinions.¹¹⁵ Dialogue may still be worth ten minutes as dialogue. It is not a proven engine of generic thinking or of middle-school attainment at scale. Teacher glow is not the outcome.

If a recap says *dominated* and a teammate repeats *dominated*, repeating *dominated* as the thing to knock down practices the rumor. Repeating the check — the box score, time of possession, what *dominated* is being asked to mean — practices the look. If the student later says “but we dominated,” repeat the check (“we looked at the score”), not the rumor in a singsong. That is a translation of a handbook about correction, using a sports claim. It is not a trial of eleven- to fifteen-year-olds, and it is not a licence to hunt liars as the weekly object.¹¹⁶

That is worth the struggle because the house already disagrees. Who should be captain. A write-up versus a table. Two forecasts. A box that says *best*. A rainfall picture that looks huge. Grey sky versus the window. Each of those can be a fight, or a sequence. The parent who can hear “because it’s fair” as a starting point, not a check, can teach this week. The student who can let the other person finish, say their claim so they would nod, and look at one other thing has practiced deciding what to believe or do, with reasons, on a domain they actually know.

This week you can learn the sequence on a captain vote or a recap, and that a fluent “because it’s fair” is still a starting point, not a check. Today the student can let the other person finish, say theirs so they would nod, and look at one other thing — the box score, the list, the spec sheet, the axis.

¹¹⁵Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months**); whole-cohort reading 0.01; maths similarly **0 months**. Pupil-survey items on explaining ideas (effect size -0.06) and working with different opinions (0.13, $p = 0.07$): no significant improvement. Teacher glow is not the outcome. English Year 6 $\approx$ age 10–11, floor of this band. Whenever Philosophy for Children is named in this book, copy **0 months**. Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF P4C efficacy trial, 2015: reading $+0.12$ / maths $+0.10$ — efficacy that did not replicate at scale.

¹¹⁶Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally and the risk is lower than once thought; do not refrain from correcting out of fear of backfire. Continued-influence effect is the sticky problem. Detailed refutation outperforms a bare “that’s false.” Illusory truth: repetition increases judged truth. Translation in this chapter: snack or sports claim only; repeat the check, not the rumor. This is a translation, not an 11–15 randomized trial of the handbook. Climate, vaccine, and electoral examples from the wider literature stay out of the teaching text.

For the parent: understand it yourself

You do not need to be a debate coach. You do need to hear “because I want the starting spot” as a wish, “because it’s fair” as a fluent start, and “the recap said dominated” as a sentence that still has a table.

Everyday picture. Two people, one captain’s armband, or one remote. Each has a sentence. If you pick a winner in the first second, you have a referee hour. If you say “say yours, then say theirs,” wait, ask what *captain* means, ask how they know, and look at last week’s actual jobs, you have a thinking hour. The game is still a game. Five to ten minutes when it actually happens, or as a calm replay. If the stakes are too hot, postpone. Practice on a cooler claim.

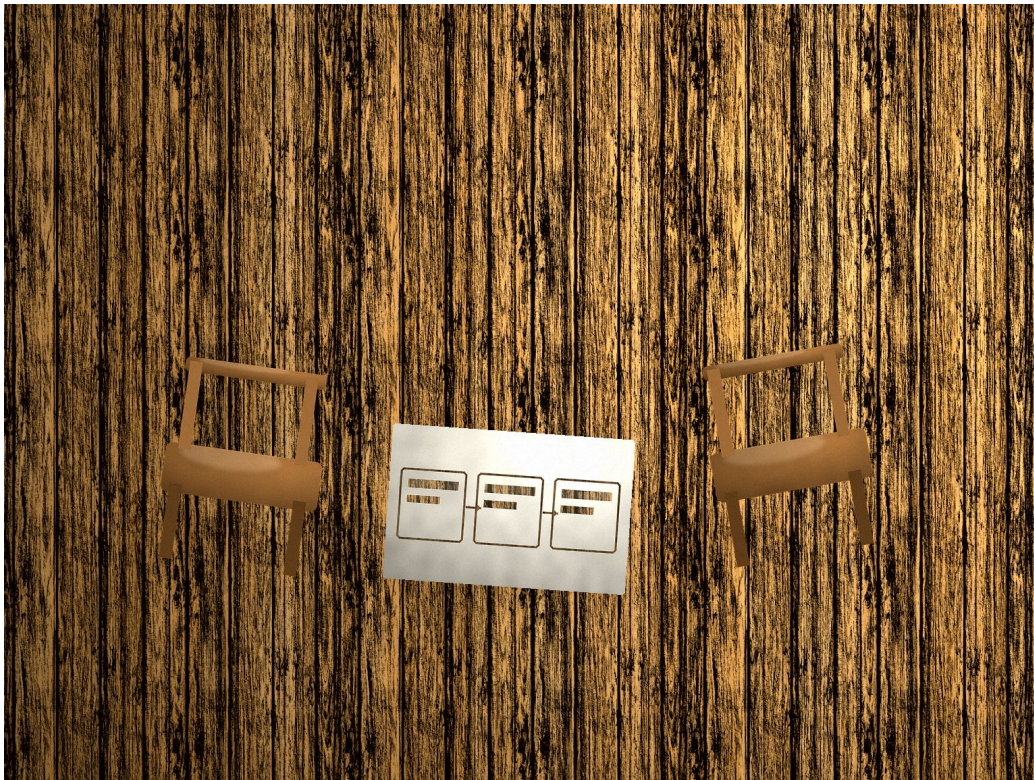


Figure 18: Two empty chairs facing each other across a table, a scrap of paper with three boxes

Precise picture. A *claim* is a sentence that can be true or not, or fair or not, about

something we can look at. You do not have to win. You have to **listen**, then **ask what they mean**, then **ask for a reason**, then **leave this page for a second source**, then **wait**, then **allow a change of mind**. A fluent sentence is not a check. A *steelman* is the strongest fair version of what they mean, said so they would nod. It is not agreement. After you say it, you still look. A graph can mislead by scale; “looks huge” is a caption, not a number. Changing your mind when the check goes the other way is the work. It is not losing. “I’m not sure yet” is allowed. Fake certainty is a fluent sentence pretending to be a check.

Four lines on a fridge are a classroom cousin scaled down: we listen; we ask what you mean; we give a reason; we can change our minds.¹¹⁷ Posting is not practice. Practice is the next disagreement.

Reasons can be better or worse. Sensitivity to context — last week’s jobs are not the same object as a feeling about the armband; a spec sheet is not a reviewer’s word *best* — is not the same as “anything goes.”¹¹⁸ You can train the talk moves and still leave someone believing that reasons do not rank. Take that seriously. Hearing a wrong reason, then asking a better question, then naming a better reason if needed, is teaching. Silence in the face of a false reason is not kindness. “Never correct the student” is not this book’s rule.

If a real family disagreement is too hot for the table today, pick the recap, the two forecasts, or the rainfall picture. Practice the moves. A later, heavier claim will need knowledge this sitting does not have. That is a fact about knowledge, not a dodge.¹¹⁹

¹¹⁷Neil Mercer, Rupert Wegerif, and Lyn Dawes, “Children’s Talk and the Development of Reasoning in the Classroom,” *British Educational Research Journal* 25, no. 1 (1999): 95–111. Classroom ground rules at ages 9–10: we listen; we give reasons; we ask; we can change our minds. Portable manners, not a critical-thinking inventory and not an 11–15 trial.

¹¹⁸Matthew Lipman, “Critical Thinking — What Can It Be?,” *Educational Leadership* 46, no. 1 (1988): 38–43. Criteria, self-correction, sensitivity to context — aims, not EEF evidence. Ian Wilkinson, Alina Reznitskaya, and colleagues on training talk moves while some adults still treat reasons as unranked: take seriously that reasons can be better or worse; “anything goes” is not Lipman’s sensitivity to context.

¹¹⁹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; Willingham, “How to Teach Critical Thinking,” NSW Department of Education, 2019. Maxims without knowledge will not implement; sequence and revisit. This book teaches the moves on known stakes and does not rehearse a later civic domain as content. Paul L. Harris, Shiri Einav, and Michaela Gummerum’s developmental work: young people already weigh speakers; look still outruns meaning on a page. Next move is reason plus second source, not “trust no one.” Their science/health pages are research objects, not this chapter’s teaching objects.

Wrong answers you should be able to hear

1. Listening means giving up the starting spot. “If I let them talk, they get captain.”

What it usually means. They think the sequence is a trick to make them lose.

What to say. “Say yours, then say theirs. Then we look at last week’s jobs, or the list, or the spec sheet. Changing your mind if the check goes the other way is not losing. We still decide what to do.”

2. A fluent fairness sentence with no check. “Because it’s fair.” “Because the recap said dominated.” “Because the box says best.” “Because it sounds right.”

What it usually means. A starting point offered as the look. The mash of a why that makes sense with evidence that it is so.

What to say. “What do you mean, *fair*? How do you know? What’s a second place we could look?” Then look. If needed: “Fair in this pick has meant who organized last week. The list is on the fridge. That is the look we have.”

3. You supplied the meaning and argued with that. They said “first.” You heard “always first,” and now you are in a fight with a sentence they did not say.

What it usually means. Meaning was skipped. Argument ate the sitting.

What to say. “What do you mean, *first*?” Wait. Then the reason. Then the check.

4. Repeat the rumor to knock it down. “Dominated, dominated, dominated — see, we didn’t.” Or a singsong of “they said always” after you already looked at the list.

What it usually means. The sticky sentence got practiced. The check did not.¹²⁰

What to say. Repeat the check: the box score, the list, the spec sheet, the axis, the other forecast. Lead with what you looked at.

¹²⁰Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally and the risk is lower than once thought; do not refrain from correcting out of fear of backfire. Continued-influence effect is the sticky problem. Detailed refutation outperforms a bare “that’s false.” Illusory truth: repetition increases judged truth. Translation in this chapter: snack or sports claim only; repeat the check, not the rumor. This is a translation, not an 11–15 randomized trial of the handbook. Climate, vaccine, and electoral examples from the wider literature stay out of the teaching text.

5. A performance of a fight, or a performance of being “the nice one.” Volume as proof. Or instant surrender with no look, to please you. Or a steelman that is actually a straw.

What it usually means. The sitting became theatre. The object left the table. Steelman was heard as a personality, not as a fair version plus a check.

What to say. Stop. Point at the recap and the table, the two forecasts, or the rainfall picture. Smaller claim. “Say yours, then say theirs. What can we look at?” If it is still theatre, postpone.

Five-minute parent warm-up

Before the next real disagreement, or with a cooler claim on purpose:

1. Write the sequence on a scrap: listen; what do you mean; how do you know; two sources / leave this page; wait; you may change your mind; fluent ≠ check; steelman; a graph can mislead by scale. You will not use all of them as a script in the first second. You will have them.
2. Write tonight’s opening: “Say yours, then say theirs.” Wait a slow three out loud. It will feel long.¹²¹
3. Write one fluent fake you expect — “because it’s fair,” “the recap said dominated,” “we always,” “looks huge” — and the check you will point at: last week’s jobs, box score, list, spec sheet, other forecast, axis from zero.

If those three are fluent, you can hear a wish, a mash, and a rumor being practiced. That is the job. The student still talks. The object still sits there.

How to teach it this week

Use the thinking-hour shape. Fill it with a captain pick, a recap, two forecasts, a review versus a spec, an *always*, or a rainfall picture. Stop while it is still a sitting. Safe stakes only.

Warm-up (2–4 minutes). Yesterday’s walk or yesterday’s one-change, from memory. “What did we look at? What did we used to think?” Then: “Today we say

¹²¹Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention. Mary Budd Rowe (1972/1974) is science class. Do not mash.

ours, then theirs, and look at one other thing.”

Short model (5–8 minutes). Two chairs. A recap that uses *dominated* and a box score, or two forecasts and a window. You listen to one side (you may play it from the page). You say it back so that side would nod. You ask what *dominated* means. You open the table. You wait. You say what you saw. Then you show the *wrong* cousin on purpose: a fluent “the recap said dominated” with no table, or a straw instead of a steelman. “Is that the strongest fair version? Is that a check?” Wait. Then stop talking sooner than feels polite.

Exact wording you can steal.

On the sequence: “Say yours, then say theirs.”

On meaning: “What do you mean, *captain*? What do you mean, *dominated*? What do you mean, *always*?”

On a reason: “How do you know?”

On a second source: “What’s a second place we could look? Let’s leave this page.”

On wait: after the question, a slow three. After they stop, wait again.

On mind-change: “You may change your mind. That is not losing.”

On fluent ≠ check: “That sentence is fluent. What did we look at?”

On steelman: “Let me say it back in the strongest way: you think X because Y. Is that fair?”

On a graph: “What does this graph actually show? Where does the axis start?”

On a rumor: repeat the check, not the sticky word.

Student attempt. After the model, they run the next pair — captain criteria versus last week’s jobs, or review versus spec — with you watching. Product: one steelman sentence plus one named check, spoken or a dated line. You wait. You do not finish their fair version. You do not award the armband in the first second.

One good question. After the attempt: “If we only had the recap, and not the table, what would we still not know?” The student generates the why.

Mixed practice. One captain replay. One rainfall redraw. One two-forecast look. Mix, so the sequence is not glued to sport.

Exit ticket (2–5 minutes, unaided). “Say yours, then say theirs. What did you look at?” Spoken is enough at eleven to thirteen. At fourteen to fifteen, one dated line: both claims, the check, what you think now. Tool closed.

How to fade help. You say the fair version → they repair one word → they say it so the other person would nod, then they name the check. When they can catch a fluent caption with no look, without your prompt, put the scaffold away. Bring it back when a new kind of disagreement arrives — a spec sheet, a second storm page, a sibling text.

When to stop talking. After one model and one question. You hold the key: did both sides get said, did meaning get asked, did a look happen? You do not become a lecture about controversy. The sequence cannot wait. A live fight as content can.

Age-band moves

11–13. Prompted dual focus is the win for the week. One sentence each. One steelman sentence. One cheap check: box score, list, window, axis, spec sheet. First-order is enough: I thought we dominated; we looked at the score; the word was doing extra work. A fairness sentence will still arrive as if it were a look. Hear it. Ask what they mean. Then look. You may name a better reason if the sitting needs one. Silence in the face of a false reason leaves them with the error.

14–15. Same sequence, slightly heavier grain. Holding dual focus with less prompting. Noticing a fluent caption in place of a look. Treating “just an opinion” as a claim to be examined rather than a truce. Two-sentence steelman, then a named second source. They can write the short reason plus the check. They still go own-side first, some of the time. They still need the object. A fluent recap is not a check. They may still hear steelman as giving up. Practice on a cooler claim until they would nod at the fair version.

Placement is by skill, not birthday. A fifteen-year-old who still treats listening as losing is still in the 11–13 band of this chapter. An eleven-year-old who can say theirs and then open a table is already practicing the 14–15 catch. A publisher’s “grade 7 critical thinking workbook” is a scope, not a legal grade, and not a transcript line.

Practice that actually builds learning

Named try-its. Time, materials, safety, the fun, the skill. At least one lives at the table. At least one lives after a game, a shop, or a walk. Safe stakes only.

Try-it 1 — Who should be captain

Time. 5–10 minutes, when it actually happens or as a calm replay.

Materials. Named criteria (who starts, who speaks to the official, who organizes). Last week's actual jobs, if you have them.

Safety. No humiliation. No audience of neighbours. Ordinary game. If the stakes are hot, postpone.

The fun. Being heard. Criteria on the table instead of volume.

The skill. Listen. Meaning of *captain*. Steelman. Check against last week's jobs.

How to run it. “Say yours, then say theirs.” Wait. “What do you mean, *captain*?” Name the criteria. Look at last week's jobs. Last thoughts: “I used to think... now I think...” if the look moved the pick. You still decide what to do. The sequence is not a trick to take the armband.

11–13. You name the criteria. They say one fair version.

14–15. They name the criteria and the check. Cue: “this is like the three boxes.”

Try-it 2 — Recap “dominated,” kitchen or after a game

Time. 5–15 minutes.

Materials. Recap plus box score. Unreadable league marks are fine. No brand required.

Safety. No humiliation of a player. After, not during.

The fun. The write-up's word versus the numbers.

The skill. Meaning of *dominated*. Who's behind the word if a byline is there. Other source. Fluent “the recap said dominated” is not a check. Repeat the check,

not the rumor.¹²²

How to run it. Read the recap’s word. “What do you mean, *dominated*?” Steelman the recap so its writer would nod. Open the table. Lift one number. If they later say “but we dominated,” repeat the score, not the word in a singsong.

11–13. One word. One number.

14–15. They name what the table does not tell you. Cue: “this is like the rainfall picture.”

Try-it 3 — Two forecasts / two storm pages

Time. 5–15 minutes.

Materials. Two forecasts, or two pages about the same storm, then the sky or a rainfall table. Weather as weather.

Safety. Roads if you check the sky from a window. No policy seminar.

The fun. Two speakers, then a look outside.

The skill. Two sources. Wait. Mind-change.

How to run it. “Say what this one claims, then what that one claims.” Wait. Look at the sky or the table. “You may change your mind.”

11–13. Two short claims. One look.

14–15. They name who would be in a position to know, then still look. Cue: “this is like the library two-book.”

Try-it 4 — Review versus spec sheet

Time. 5–15 minutes.

¹²²Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally and the risk is lower than once thought; do not refrain from correcting out of fear of backfire. Continued-influence effect is the sticky problem. Detailed refutation outperforms a bare “that’s false.” Illusory truth: repetition increases judged truth. Translation in this chapter: snack or sports claim only; repeat the check, not the rumor. This is a translation, not an 11–15 randomized trial of the handbook. Climate, vaccine, and electoral examples from the wider literature stay out of the teaching text.

Materials. A product already in the house, or two packages at the store you were in.

Safety. Aisle courtesy if you are in a shop. No lecture to strangers. No body talk. No shoplifting a “test.”

The fun. *Best* as a reviewer’s word; capacity as the sheet’s.

The skill. Claim versus table. Leave this page. Fluent “the review said best” is not a check.

How to run it. Read the review or the front. Open the spec sheet or the side. “What do you mean, *best*? What’s a second place we could look?”

11–13. One pair. One missing piece.

14–15. They steelman the review so the reviewer would nod, then still open the sheet. Cue: “this is like two labels.”

Try-it 5 — Teammate “we always start with X,” after practice

Time. 3–10 minutes.

Materials. Last week’s written starting five, or a memory of *this* game you can check.

Safety. No sideline interrogation. No gotcha against a coach. Ordinary game.

The skill. Meaning of *always*. Counterexample. Take the teammate seriously. Still leave the sentence for the list. If they later say “but they said always,” repeat the list, not the rumor in a singsong.

The fun. *Always* meeting a Tuesday that went otherwise.

How to run it. After. “Say yours, then say theirs.” Steelman. “What do you mean, *always*?” Open the list.

11–13. One counterexample you can point at.

14–15. Steelman in two sentences, then the list. Cue: “this is like *always* on the walk.”

Try-it 6 — Rainfall graph that looks “huge”

Time. 5–10 minutes.

Materials. A chopped-axis rainfall picture, then redraw from zero. Pointer to Chapter 5.

Safety. None special.

The fun. Watching the leap shrink.

The skill. A graph can mislead by scale. Fluent “looks huge” is not a check.

How to run it. “What does this graph actually show?” Steelman the caption: “You think May was a leap because the bars look far apart.” Redraw from zero. Repeat the numbers, not “huge, huge, huge.”

11–13. You draw. They lift.

14–15. They catch the axis start. Cue: “this is like the fridge graph.”

Try-it 7 — Kitchen cousin: steelman a sibling / a text

Time. 5–10 minutes.

Materials. The disputed claim. Pointer to Chapter 6.

Safety. No audience of neighbours. Cooler claim if the hot one cannot carry the sequence.

The skill. Say theirs so they would nod; then check.

How to run it. “Let me say it back in the strongest way...” Repair until they would nod. Then look.

11–13. One sentence.

14–15. Two sentences, then they name the check.

Talk box

Exact opening question. “Say yours, then say theirs.”

Not: “Who is right?” The question is authentic. It is about both claims, then a look.

Follow-ups (pick three to five, not all at once).

1. Meaning: “What do you mean, *captain*? What do you mean, *dominated*?”
2. Reason: “How do you know?”
3. Alternative or counterexample: “Always? Can we think of a time it wasn’t? What’s a second place we could look?”
4. Steelman: “What’s the strongest version of what they mean? Say it so they would nod.”
5. Revise: “You may change your mind; that is not losing.”

How to wait. After you ask, a slow three is a convention, not a sacrament.¹²³ After they stop, wait again. If they are mid-reason, do not cut them off. Look at the box score, the graph, or the window, not at the student, if the silence is hard. At eleven to fifteen the shrug often looks like refusal. Do not rescue it.

What a stuck silence usually means. They think listening means giving up the starting spot. They are performing a fight. The adult supplied the meaning and argued with that. They think steelman means being nice as a personality, or giving up. Wait-time 1 was zero. They offered a why-story where a look was asked for. They think “critical” means finding fault. The parent’s job is to pose, wait, and point back at the object — not to fill the silence with the right side, and not to turn the table into a fight.

One incorrect example to diagnose

A fluent recap with no box score, offered as a finished argument, then practiced as a rumor.

Student, after a game: “We dominated. The write-up said dominated. Everyone says dominated.”

Parent, trying to help, in a singsong: “Dominated? Dominated. Let’s knock down dominated.”

What went wrong. The sticky word got repeated. The check never arrived. A fluent caption did the work of a table. The correction practiced the rumor.

¹²³Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). Think-time; about three seconds as a convention. Mary Budd Rowe (1972/1974) is science class. Do not mash.

What to do. Hear it. Steelman: “The strongest version of what the write-up means is: we had the better of the play, and the writer picked a strong word.” Then: “What do you mean, *dominated*? What’s a second place we could look?” Open the box score. Lift time, or points, or shots. Say what you saw. Later, if they say “but we dominated,” repeat the score, not the word. Correct the reason. Do not crush the talk. Some reasons are better than others.

For the student

Disagreement is already in the house. A captain pick. A recap. Two forecasts. A box that says *best*. A teammate’s *always*. A rainfall picture that looks huge. Your job is not to win the first second. Your job is to say yours, then say theirs, then look at one other thing.

Tiny worked example. A write-up says the team *dominated*. Your friend repeats it. You let them finish. You say it back so they would nod: they think the game was one-sided because the write-up used that word. Then you open the box score. You lift one number. Maybe the word fits. Maybe the word was doing extra work. Either way, you looked. If you later want to say the word again, say the number too.

Two tries.

1. Two people, one captain’s job — or one remote. Say yours. Say theirs so they would nod. Name the criteria. Look at last week’s actual jobs, or at a list on the fridge.
2. Two forecasts, or a review and a spec sheet. What does each one claim? What would change your mind? What can you look at that is not this page?

Explain it back. Tell someone at the table, in your own words, what “say yours, then say theirs” is asking. Then point at the recap and the table, or at the two chairs, and say how you know.

Challenge. A rainfall picture looks huge. Say the caption so the person who said “huge” would nod. Then ask where the axis starts. Redraw from zero. You may change your mind. That is not losing.

You are allowed to wait. You are allowed to be wrong and then look. You write, or you say, the new sentence. A tool does not say theirs for you. A fluent “because it’s fair” is not a check. Leave this page and look at one other thing.

If it isn't clicking

Three diagnostics. Each one has a next move. None of them is a verdict on talent. None of them is a reason to wait for a birthday.

1. Listening is heard as losing, or the sitting is theatre.

The sequence never started. Next move: cooler claim. Two chairs. “Say yours, then say theirs.” Wait a slow three. Smaller object: two forecasts, not the arm-band. Stay there until both sentences can finish. Go ahead to captain and recap once finishing is easy. A human tutor is optional here; the objects are cheap. Bring someone in if several weeks of short sittings still end in volume or in instant surrender *and* the hour has become a fight.

2. Every reason is a fluent caption: “fair,” “dominated,” “always,” “huge,” “best.”

A look was asked for; a sentence arrived. Next move: point at the object. Box score. List. Spec sheet. Axis. Other forecast. Repeat the check, not the sticky word. Name, if needed, a better reason. Hearing is not endorsing. Correcting the reason is not shutting the student down. Stay on recap-versus-table until a caption is hearable as a caption. Go ahead to steelman-after-practice once a table can beat a word. A tutor is useful if the sitting is stuck on captions after you have pointed at the object, consistently, and the student is distressed — distress from a well-posed look is effort; distress from a parent who has taken the argument is a different problem. Separate them.

3. Steelman is a straw, or “just an opinion” is used as a truce.

“So you think I’m lazy.” Or: “Whatever, it’s just an opinion,” before anyone has looked. Next move: model one fair sentence. “Is that fair?” Wait until they would nod. Then look. Opinions are claims too when they are about something we can check. Slow down the hot sitting until a cooler claim can carry the fair version. Go ahead to two-sentence steelman once one sentence would get a nod. A tutor is not the first move; the object is.

When to slow down. Both sides not yet said. Caption still the default. Steelman still heard as surrender. Fight at the table. Those are brakes. Age is not a brake.

When to go ahead. They can listen, name a meaning, offer a checkable reason, open a second source, wait, change a mind when the check goes the other way, and say a one-sentence steelman on a known stake. Then you are done enough

with this chapter, whatever the birthday. The habit continues. It does not become a ninth course.

When to get a human tutor. You cannot yet hear a caption-as-check or a straw-as-steelman, even after the five-minute warm-up. Or the student has weeks of short sittings, and the unaided sequence still skips the look. Or the hour is a fight. A tutor is a release valve, not a failure of the table. Keep yourself as the person who can still hear “because it’s fair.”

Tools, including AI

Optional helpers for you, the adult. The full rules live in the thinking-hour box in the front of this book. This chapter is a pointer, not a second policy paper.

The student talks to you. The student looks at the table, the list, the spec sheet, the axis. You may, on your account, after they have tried, ask a tool to explain this page to you from a named book page, to offer extra questions you will vet, to write a short SCRIPT for *you* to say, to give a hint after an attempt, or to diagnose a reason they already gave. You hear the diagnosis and you decide. Throw out any extra question that imports a live controversy, a secret, a pretend expert, or a model-written steelman for the student to paste as theirs. A tool does not invent who started last week, what the score was, or whether the shop is closed.

The student does not sit alone with an open chat. A fluent reason from a machine is performance, not the student’s check. Detectors are not a grade. There is no certificate of thinking to print.

Ages 11–12 (under 13). Scripts and parent–child talk. Not live open chat. No child account on a general-purpose chat. Default: no child login.

Ages 13–15. Turning 13 is a legal hinge, not a thinking birthday. Still no unsupervised chatbot as the only partner. A labelled SCRIPT after the student tried remains the default. You hold the account.

A thinking tool is not a secret friend. It is not a debate partner.

What “done enough” looks like

A student who can listen, name a meaning, offer a checkable reason, open a second source, wait, change a mind when the check goes the other way, and say a one-sentence steelman on a known stake is done enough with this chapter, whatever the birthday.

11–13. Prompted dual focus is the win for the week.

14–15. Holding dual focus with less prompting, noticing a fluent caption in place of a look, treating “just an opinion” as a claim to be examined rather than a truce.

Done enough is skill, not a birthday, and not a course called Disagreement 1. If a log needs an English line, “recap versus box score / steelman / looked” is an English line. If the work was two forecasts and a window, the title is still **Science**. It is not Critical Thinking I. A “grade 7 critical thinking workbook” is a publisher’s scope, not a transcript line.

Checklist before moving on.

- Lets the other person finish.
- Asks what they mean by a loaded word: *captain, dominated, always, best, huge*.
- Offers a reason that could be checked, not only a wish.
- Opens a second source — box score, list, spec sheet, other forecast, axis — before treating a fluent sentence as a check.
- Says a one-sentence steelman so the other person would nod, then still looks.
- Repeats the check later, not the rumor in a singsong.
- Changes the sentence when the look goes the other way, without treating that as losing.

What can still be thin: unaided far transfer to an unseen later story; holding the sequence when the stakes are hot; a two-sentence steelman at eleven. Those can wait. They are not a window that closed.

Life of the habit (this heading, not a ninth chapter). Growing from eleven-to-thirteen into fourteen-to-fifteen is more miles on the same road, not a new faculty. Revisit the same question next Tuesday — sequence and revisit, not a one-sitting cure.¹²⁴ “I used to think... now I think...” after a look, made audible, not as a

¹²⁴Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; Willingham, “How to Teach Critical Thinking,” NSW Department of Education,

confession ritual.¹²⁵ Fridge ground rules (we listen; we ask what you mean; we give a reason; we can change our minds), then the next real disagreement. Posting is not practice. Placement by skill, not birthday. Not a diploma. Not a certificate of thinking. Not a closing window. Frequency the evidence actually supports at the parent grain is unknown. The honest pitch is *often enough that the question is familiar*. Point to Chapter 9 for the dated notebook and the short written reason plus the check. A path through ordinary challenges is the promise. A diploma is not.

A parent who felt rusty should be able to say, after this chapter: I understand the sequence. I know what to say tomorrow. I know what an own-side “because” sounds like when it is not yet a check, and what a fluent recap offered as a look sounds like. The student still talks and looks. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can say the other side fairly. I can change my mind when we look.

2019. Maxims without knowledge will not implement; sequence and revisit. This book teaches the moves on known stakes and does not rehearse a later civic domain as content. Paul L. Harris, Shiri Einav, and Michaela Gummerum’s developmental work: young people already weigh speakers; look still outruns meaning on a page. Next move is reason plus second source, not “trust no one.” Their science/health pages are research objects, not this chapter’s teaching objects.

¹²⁵Robert H. Ennis, “The Nature of Critical Thinking,” 2015 PDF. Disposition 9, change of mind when the evidence so requires, made audible as “I used to think... now I think...” The concept is not negative. Sam Wineburg and Sarah McGrew, “Lateral Reading and the Nature of Expertise,” *Teachers College Record* 121, no. 11 (2019); Joel Breakstone, Sarah McGrew, Teresa Ortega, Mark Smith, and Sam Wineburg, “Students’ Civic Online Reasoning: A National Portrait,” *Educational Researcher* 50, no. 7 (2021): 3,446 high-school students; 96 percent never learned a climate site’s fossil-fuel ties. Wineburg and colleagues, 2022, high-school government course. Older-student evidence of why the habit of leaving a finished-looking page is taught. **Do not assign the items.** Do not print the fossil-fuel item, the voter-fraud item, or a live civic page as an 11–15 exercise. Near transfer to another recap, spec sheet, or storm page is the honest hope. Far transfer to civic web evaluation is an open question.

Chapter 9

Records

The thinking *work* can be as serious as any kitchen's. The *credit* is a family claim until a stranger can use it — a receiving seventh-grade teacher, a Pennsylvania evaluator, a New York quarterly reader, a later high-school transcript the family will someday write. That stranger will not have sat at your table. They will have a page.

This chapter is how you make that page at ages 11–15. Lawful, honest, and readable to a stranger are three jobs. Keep them in view.

This week you can date one short written reason plus the check so a stranger could almost read it. Today the student tries the question. You write the line, or they write the page.

Illustration. An open notebook, a dated reason, two named sources, a check. No diploma seal. No “A+.” No logo. No child.

What you are making

You are making a **dated notebook** and a **short written reason plus the check**, stimulus named, sources named. You are not making a national diploma. You are not making Critical Thinking I.

There is often **no** “Critical Thinking I” credit in middle school, homeschool or otherwise. Public middle-school reports, when they exist, say English, Mathematics, Science, Social Studies. Homeschool files, when they exist, follow the state's list. A family that invents “Critical Thinking I, 1.0, A” for a twelve-year-old has

created a slogan. A receiving seventh-grade teacher cannot map it.

There is no federal homeschool diploma and no national critical-thinking credit.¹²⁶ Texas, North Carolina, and New York do not issue one. Pennsylvania has its own supervisor or approved-organization diploma after listed graduation courses — a high-school object, not a twelve-year-old's file. A parent-issued diploma can be a real piece of paper later. It is not a registrar's national thinking credit now.

Two readers, if anyone outside the kitchen asks. The **state**, in a thick jurisdiction: an IHIP, an affidavit, a portfolio, a reading-and-math test (Pennsylvania's grade 8 sitting and North Carolina's annual battery are inside this band). A **later stranger**: a public school on transfer; a private school; a future high-school transcript; at fourteen to fifteen, possibly dual enrollment or a later college-prep reader. State compliance is not a thinking diploma. A thick Pennsylvania portfolio can be in statutory compliance with no philosophy score. A silent Texas year can be lawful with no file at all. Neither fact is a reason to skip the moves. Both facts are a reason not to fake a credit.

Athletic eligibility worksheets and college exams are the wrong object for most of this book. One sentence each, so a parent of a fourteen-year-old is not lied to: the University of California's A–G course list does not name critical thinking as an area; NCAA may count philosophy as additional core, and “critical thinking” is not a named core area.¹²⁷ A parent of a twelve-year-old who is already anxious about core-course worksheets has been handed the wrong timeline. NCAA will not see a middle-school line as a core course.

The national survey of homeschool subjects never offered a critical-thinking checkbox. Thinking moves, if they happened, happened inside English, science, or conversation.¹²⁸ Informal learning does not arrive as “English, 1.0, B+.” If a thick

¹²⁶No national diploma: Texas Education Agency does not award a homeschool diploma; North Carolina's home school, not the State, issues any later diploma; New York home instruction does not yield a local or Regents diploma. Pennsylvania's supervisor or approved-organization diploma follows listed graduation courses and is a high-school object. Access date for sources in these notes: 1 September 2026.

¹²⁷University of California A–G subject areas: critical thinking is not a named area. NCAA additional-core language: philosophy may be additional core; “critical thinking” is not a named core area. One sentence each in the body, so a fourteen-year-old's parent is not lied to. Not an eleven-year-old threat. AP, CLEP, Common App, and dual enrollment remain later objects.

¹²⁸National Center for Education Statistics, PFI 2016 (NCES 2020-001), Tables 8 and 9: no critical thinking, philosophy, logic, or informal reasoning row. Do not paste neighboring subject percents into a thinking sentence. Informal learning was 12 percent in Table 6 (2016); it still trans-

state later wants a log, the translation is: name the source, name the question, date it, write the short reason, name the check.

Titles a stranger can read

Print these and only these as middle-school names, if a name is needed at all:

English / Language Arts. Mathematics. Science. Social Studies / History. Art, Music, Physical Education.

Those names travel. They are the names public middle-school reports already use. They are the names homeschool files, when they exist, already follow. In New York, grades 7–8 mention library skills on a regular basis — a statutory neighbor, still not a thinking title.

Never a brand. Never Critical Thinking I. Never P4C I. Never Paul–Elder. Never Thoughtful Gold. Never Ethics Bowl I. Never Lab Thinking 1. Never Argument Mapping I. Never Outdoor Philosophy 1. Never Young Mind, Level 2.

The dated notebook and the short written reason live *inside* English or Science. Honesty on the title is the same rule as honesty on a reason. If the year’s work was English essays and kitchen checks, the title is English and Science. A beautiful binder labelled “Young Mind, Level 2” has satisfied one reader (the parent) and confused the next.

The brand, if used at all, sits in a parenthetical or in a description: “English (source comparison; one-page reason; questions in a dated notebook).” “Science (two labels; one-change; looked).” Combining objects is allowed. Combining does not mint a new title. Library books plus kitchen check plus one module question is still English and Science.

A publisher’s “grade 7 critical thinking workbook” is a scope, not a legal grade, and not a transcript line. Placement is by skill, not birthday.

Here is an illustration, labelled as such, not a reported family:

lates, if a thick state asks, as source, question, date, short reason, check. NCES 2024-113 remains the latest federal homeschool count on 1 September 2026: 3.4 percent / about 1.765 million in 2022–23; 6th–8th 3.0 percent; 9th–12th 3.1 percent. Instruction-at-home 5.2 percent is a different bucket.

12 September 2026. Question: Does the library copy of *X* say the same thing as the website summary about how glaciers move? Student: No, because the website omitted the date and the author's job. Check: we looked at the title page and the about page. Sources: [book title, call number]; [URL, date retrieved].

That is a record a parent, a Pennsylvania evaluator, or a New York quarterly narrative can actually use. It is not a credit. It is not a sitting on a college inventory. It is not Cornell Level X. It is not a diploma. It is the first research report.

The law is a pattern, not one form

U.S. homeschooling is state law. There is no federal thinking office. Dates and subject lists change. Read your current department page and the statute it cites. A color-coded chart on a membership site is not your statute. Five official-page examples show the range. **None of them requires a critical-thinking course.**¹²⁹

Texas. The Agency does not regulate home-school programs. Parents follow a bona fide written curriculum: reading, spelling, grammar, mathematics, and good citizenship. Critical thinking is not named. Philosophy is not named. The state does not award a homeschool diploma. "We did a philosophy hour" is not, by itself, a public-school credit. Transfer is treated like an unaccredited private school. The kitchen still benefits from a dated notebook if the family later transfers. The Agency will not file it.

North Carolina. Notice of Intent. Nine calendar months. Each year, a nationally standardized test in English grammar, reading, spelling, and mathematics — not critical thinking. The home school, not the State, issues any later diploma. A thinking notebook is extra. It is not the annual test.

¹²⁹None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course. Texas: *Leeper* bona fide curriculum (reading, spelling, grammar, mathematics, good citizenship). North Carolina Division of Non-Public Education: annual test in English grammar, reading, spelling, mathematics. Pennsylvania 24 P.S. § 13-1327.1: portfolio tests in grades 3, 5, and 8 in reading/language arts and mathematics, not critical thinking; graduation units in (d) are 4 English, 3 math, 3 science, 3 social studies, 2 arts/humanities — not critical thinking. Virginia Department of Education: list of subjects; evidence of progress is a composite stanine or SAT/ACT/PSAT or an evaluation letter. New York 8 NYCRR 100.10: grades 7–8 include library skills on a regular basis, still not a critical-thinking course; quarterly reports of hours, material covered, grade or narrative. HSLDA was not used as a legal primary.

Pennsylvania. Secondary lists and graduation units are the thick objects at this age: English, mathematics, science, social studies, arts and humanities — not critical thinking. Portfolio tests in grades 3, 5, and **8** are in reading/language arts and mathematics, not critical thinking. Drop the short written reason into the log of reading materials and samples. Do not invent a parallel “CT portfolio.” A supervisor diploma is Pennsylvania’s, and it is high school.

Virginia. A parent-written list of subjects, and evidence of progress: a composite score at or above the fourth stanine, or an equivalent SAT, ACT, or PSAT score, or an evaluation the superintendent accepts. Critical thinking is not named as required. Those sittings are not thinking exams. Do not sit a college inventory to “satisfy Virginia.” Adding “Critical Thinking” as a fifth line on the subject list does not make the year more lawful. It may confuse a later stranger. Put the first research report inside English or Science.

New York. Letter of intent, an Individualized Home Instruction Plan, quarterly reports, and an annual assessment. Grades 7–8 include library skills on a regular basis, still not a critical-thinking course. Quarterly reports: hours, material covered, grade or narrative. Put enquiry under English or Science in the quarterlies. Home instruction does not yield a local or Regents diploma. Placement is by need, not birthday. Grades 9–12 have electives as a door, not a slogan.

If you live in none of those states, you still have a department page. Open it.

If they transfer

Transfer is a local placement problem. A brand in the title column will not be read as English. Another reason the title should already look like English, or Mathematics, or Science, or Social Studies.

A receiving teacher who sees “Critical Thinking I, A” has been given a slogan. A teacher who sees “English — source comparison; dated notebook; short written reason plus the check; two books on glaciers” has been given a year they can place.

What does not belong in this file yet

Dual enrollment, Advanced Placement, credit-by-exam, athletic core-course worksheets, and a common college application are **not this chapter** beyond the one

sentence each already given for A–G and NCAA. Scores help a stranger believe a *high-school* transcript. They do not replace a dated reason at twelve.

College and graduate inventories — the California Critical Thinking Skills Test, the Watson–Glaser — are designed for undergraduate, graduate, or employment screening.¹³⁰ They are not for 11–15 as the family hour. Cornell Level X’s publisher range is grades 5–12+, 71 items. That is still a sitting from a publisher, still not a homeschool credit, still not the kitchen hour, still not the same instrument as those college inventories. This book does not send a parent of an eleven-to-fifteen-year-old there as the week’s work. A K–12 product line that sells thinking tests is a product line. It is not a family requirement and not a stranger-readable middle-school credit.

Unless a named college-prep elective exists on an opened list, do not write “Critical Thinking I.” This book opened A–G area language and NCAA additional-core language. It did not open a specific school’s approved course titled Critical Thinking.¹³¹

Place by skill, not birthday

Can the student lift a number from a graph and say where the picture starts? If not, they are still in the rainfall chapter. Can they name the one thing that changed? If not, they are still in a taught one-change stage. Can they say theirs so the other person would nod, then look at a box score? If not, they are still in the opening of disagreement. High-sounding *titles* cannot skip those moves. A fifteen-year-old may still be in the eleven-to-thirteen band of a chapter. An eleven-year-old may already catch a chopped axis. Skill first.

¹³⁰California Critical Thinking Skills Test: undergraduate and graduate. Watson–Glaser: employment and graduate screening. Cornell Critical Thinking Test Level X: grades 5–12+, 71 items — a sitting from a publisher, not a homeschool credit, not the CCTST, not the family hour. EDUCATE INSIGHT is a K–12 product line, not a family requirement. What Works Clearinghouse, re-opened 1 September 2026: no named Philosophy for Children intervention report; no named “critical thinking” grades 6–9 programme report.

¹³¹A named A–G course titled “Critical Thinking” at a specific school: **UNVERIFIED** this fetch. Do not invent one. New York superintendent use of Cornell Level X as an annual assessment: **UNVERIFIED**.

What to keep in the file

1. A dated notebook: date, stimulus named, the question, a short written reason, the check, sources named. Under **English** or **Science** if a title is needed.
2. A list of books and pages actually opened, if a thick state wants reading materials in a log. The brand of a module, if you used one, belongs in a description, not as the course name.
3. Samples a stranger could look at without you in the room: a one-page reason, a rainfall redraw, a three-box paper map, a dated ice-or-tea line. Not a certificate. Not a college inventory score.
4. The compliance packet your own statute asked for — an IHIP, a quarterly, a portfolio, a reading-and-math test — in its own envelope. That envelope is not a thinking diploma.

If you live in a silent jurisdiction, the notebook is still worth keeping. Transfer happens. Memory fades. A dated line is kinder than a reconstructed year. The notebook is how the habit leaves a trace. Same question next Tuesday, dated. Not a diploma ceremony.

A template, a signature, and the truth

A tool, including a helper on your side of the table, may draft a **template**: blank lines for date, stimulus, question, short reason, check, sources. That is a form. It is not a record until you fill it from the sitting.

You read every line. You check the book against the shelf and the date against the calendar. Then, if a thick state wants a signature on a quarterly or a portfolio, you sign. Hours that were not sat are a false statement. A polished paragraph the student did not say is not the student's reason. The tool may format. You attest.

Keep the notebook. One page is enough:

- the **date**;
- the **stimulus** named (book title and call number, “two tea cups,” “rainfall bars from the weather page,” “recap plus box score”);
- the **question**;
- a short written **reason**;

- the **check** — what you looked at;
- **sources** named.

That folder is not a transcript. At eleven to thirteen you often do not need a transcript. At fourteen to fifteen, if you are already writing high-school titles, write the titles the stranger already knows. The notebook is how you would defend an English or Science line if a stranger asked.

For the student

Your notebook is a picture of questions you actually asked. You looked. You said how you knew. You named a second source. You changed the sentence when the look went the other way. When a line goes on the page, it should be a line about something you did. If a line on the page is not true, say so before anyone treats it as the year.

You do not get a diploma for thinking at eleven, or at fifteen. You get Tuesday. You get a page a stranger could almost read.

What “done enough” looks like

You can hand a stranger a notebook page. The titles, if any, are from the list a teacher already knows. The questions are dated. The stimulus is named. The reason is short. The check is named. There is no Critical Thinking I. There is no certificate of thinking. The folder matches the page. That is enough.

A parent who felt rusty should be able to say: I know how to date one short written reason plus the check so a stranger could almost read it. The student still tries the question. We can do this.

Chapter 10

Resources

This chapter names programs families actually meet. It does not rank them. It does not sell them. It is a fit list so you can match an object to the table you already have: how much of the teaching you will carry, whether a kitchen can use it without a school, what it costs in money and in minutes, and whether the prompt stays on a recap, a rainfall graph, two library books, a captain pick.

A “grade 7 critical thinking workbook” is a publisher’s scope, not a legal grade. Placement is by skill. The record, as Chapter 9 said, still says English, or Mathematics, or Science, or Social Studies. Combining two honest objects does not mint a new title.

Whenever Philosophy for Children is named below, copy this sentence with it: a large English effectiveness trial in 2021, 198 schools, highest security rating, found **0 months** extra progress on reading and maths, including for pupils eligible for free school meals.¹³² Dialogue may still be worth the hour as dialogue. It is not a proven engine of generic critical thinking or of middle-school attainment at

¹³²Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

scale. An earlier, smaller efficacy trial had found about **+2 months** in reading and maths; that result did not replicate at effectiveness scale.¹³³ Teacher glow is not the outcome. Implementation failure is a load fact: if schools with trainers could not all keep the hour, a kitchen will not keep a forty-minute franchise more faithfully by buying a pin.

This week you can name *why* tonight's object fits this student — usually two library books plus one question, or a paper map. Today the student tries that question. They are not on a shopping task.

Illustration. A library card, two unmarked books, a paper map of three boxes, a kitchen table. Not a Gold pin. Not a wheel. No logos. No portraits. No readable app.

How to read a program

Four questions do the work.

Parent load. Are you asking one question on two books you already opened? Sitting with a four-hundred-page manual? Booking a trained facilitator? Building a co-op hour or a Bowl season?

Style. Kitchen one-change? A novel written for a circle of enquiry? A short published guide with cartoon characters? A walk you were taking anyway? Paper boxes before a site?

Cost shape. Nothing tonight. A book you already own. A charity training priced for schools. Fees this book did not verify. Confirm a current price on the page before you buy. This chapter does not invent one.

Kitchen without a school. Can one adult and one student use it at a table, or does it assume a class, a trainer, a Bronze-to-Gold ladder, a pin, or a login?

Reach numbers on an organization's page are that organization's copy, not a home-school census and not an effect size.

¹³³Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF Philosophy for Children efficacy trial, 2015, ERIC ED581147: 48 schools, SAPERE; Key Stage 2 n = 1,529; Hedges' g reading +0.12 (~2 months), maths +0.10 (~2 months), writing +0.03, CAT4 +0.07. Primary outcome was attainment, not a critical-thinking test. This is the **efficacy** trial that did not replicate at effectiveness scale. Do not use 2015 +2 months as if 2021 had not happened. SAPERE **dropped the novels**; owning *Harry* is not the 2015 finding.

What Works Clearinghouse, searched again on 1 September 2026, still has no intervention report named Philosophy for Children, named “critical thinking” as a grades 6–9 programme, or dialogic teaching as generic critical thinking.¹³⁴ ¹³⁵ Neighboring reports exist for preschool oral language, character education, and college advising. They are not a thinking franchise for ages 11–15. This book does not put a clearinghouse logo on a philosophy kit.

Paper map before any app.

Kitchen table, nothing spent

The chapter already read, plus wait, plus one question, plus, when the student can write it, a one-page reason with two named sources. Not Going for Gold. Not a course name. Record: a dated notebook line under English or Science.

A walk you were taking anyway is the same shape. A kitchen one-change check labelled scientific reasoning is the same shape. Two labels, a fridge graph, a captain pick. This is not “failing the specialist.” It is the object this book already taught.

Fit. Tonight, one student, low load, low cost.

Transcript. English. Science. Mathematics if the work was a graph. Never Critical Thinking I. Never Lab Thinking 1. Never Outdoor Philosophy 1.

¹³⁴Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹³⁵What Works Clearinghouse, re-opened 1 September 2026: no named Philosophy for Children intervention report; no named-critical-thinking grades 6–9 intervention report; Dialogic Reading is preschool oral language; Heartwood Ethics is character education; Academic Concept Mapping is college advising. Do not put a clearinghouse logo on a philosophy kit.

IAPC novels and manuals

The Institute for the Advancement of Philosophy for Children, at Montclair, publishes novels for students and long manuals for teachers. Philosophy for Children, in the 2021 effectiveness trial, found **0 months** extra progress on reading and maths.¹³⁶ Age labels from the catalogue this book opened: *Harry Stottlemeier's Discovery*, **11–12**; *Lisa*, **12–13**; *Suki*, **14–15**; *Mark*, **out of band**. Novels are short; manuals are long. Parent load is high. The shape is school-shaped. Large trials used a UK training charity that **dropped the novels**. Owning *Harry* is not the 2015 +2 months, and it did not survive the 2021 **0 months** on reading and maths.^{137 138} 2026 U.S. list price is not claimed here. Open the current catalogue if you want the books.

Ordinary analogues only. If a chapter prompt is a live fight, skip it. Substitute

¹³⁶Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book's band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹³⁷Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book's band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹³⁸Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF Philosophy for Children efficacy trial, 2015, ERIC ED581147: 48 schools, SAPERE; Key Stage 2 $n = 1,529$; Hedges' g reading +0.12 (~2 months), maths +0.10 (~2 months), writing +0.03, CAT4 +0.07. Primary outcome was attainment, not a critical-thinking test. This is the **efficacy** trial that did not replicate at effectiveness scale. Do not use 2015 +2 months as if 2021 had not happened. SAPERE **dropped the novels**; owning *Harry* is not the 2015 finding.

chore-rule fairness, a captain pick, a library-fine dispute — not a current political lesson. *Lisa's* catalogue copy names heavier themes; open the chapter and skip live fights.

Fit. A family that wants novels and a manual, and can carry a school-shaped hour at home or in a co-op. Not a statute. Not a clearinghouse report. Not a kitchen requirement. Not Mark.

Transcript. The novel title is not the course name. English, if the year's reading was the year's reading.

Thoughtful (formerly SAPERE)

In 2025, SAPERE became Thoughtful.¹³⁹ That is a name change, not a new trial. The English trials used the SAPERE name and a Going for Gold package. UK school training. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. A U.S. kitchen cannot go for Gold. Charity copy about reach is charity copy. Steal the shape — a stimulus, a minute of wait, one actual question, last thoughts — if it helps. Copy both trials. Philosophy for Children in that 2021 effectiveness trial: **0 months** extra progress on reading and maths.¹⁴⁰ The 2015 efficacy finding of about +2 months did not replicate at scale.¹⁴¹

¹³⁹In 2025, SAPERE became Thoughtful. Name change, not a new trial. Keep SAPERE on the EEF trial rows. “1.67 million” and similar reach figures are charity copy, not a homeschool census and not an effect size.

¹⁴⁰Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book's band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹⁴¹Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF Philosophy for Children efficacy trial, 2015, ERIC ED581147: 48 schools, SAPERE; Key Stage 2 $n = 1,529$; Hedges' g reading +0.12 (~2 months), maths +0.10 (~2 months), writing +0.03, CAT4 +0.07. Primary outcome was attainment, not a critical-thinking test. This is the **efficacy** trial that did not replicate at effectiveness scale. Do not use 2015 +2 months as if 2021 had not happened. SAPERE **dropped the novels**;

Fit. A family that wants school-shaped training and is in reach of UK provision, or that will steal the shape without the ladder. No U.S. statute requires it. Award level is not a grade.

Transcript. Never Thoughtful Gold. Never P4C I.

The Philosophy Foundation

A UK charity. It trains specialist philosophy teachers and classroom teachers. It **names home educators**: it will run sessions with home-educator groups of 5–15 students in the same key stage if a local philosopher is available or travel is paid.¹⁴² London-weighted. U.S. availability and fees are not claimed here. There is no independent randomized trial of this charity in the sources opened for this book. Do not borrow the SAPERE/Thoughtful trials as if they were this charity’s trials. When the hour is a Philosophy for Children hour, copy **0 months** from 2021.¹⁴³

Fit. A home-educator group that wants a facilitated hour and can actually book one. Moderate to high load. Not a U.S. statute. Not a kitchen-table trial.

Transcript. Not “Philosophy Foundation 1.” English, if that is the work.

owning *Harry* is not the 2015 finding.

¹⁴²The Philosophy Foundation names home educators (groups of 5–15, same Key Stage) on pages opened for this book. London-weighted. U.S. availability and fees **UNVERIFIED**. No independent TPF randomized trial was opened; do not borrow EEF SAPERE/Thoughtful trials as TPF trials. IAPC country counts, PLATO toolkit counts, and TPF beneficiary counts are organization copy.

¹⁴³Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

PLATO, and Ethics Bowl age-labelled

Philosophy Learning and Teaching Organization. A U.S. nonprofit. Mission language names students, educators, and **families**. A toolkit of lesson plans (the site describes more than 250). Open a lesson. Substitute if the prompt is a live fight. Plans are a fit object. They are not a credit.

Ethics Bowl is age-labelled. Middle School Ethics Bowl: **grades 6–8** — in-band for 11–13. National High School Ethics Bowl: **grades 9–12**; homeschool teams at organizer discretion; 2025–26 fee listed at \$175 / \$250 on pages opened for this book. In-band only at **14–15 / grade 9**. Do not send an eleven-year-old to High School Ethics Bowl. Do not put Ethics Bowl on a middle-school transcript as Critical Thinking I. Steal the format: collaborative reason, not a debate-win. Substitute ordinary analogues: a library-fine dispute; a sports-rule fairness question; a kitchen-rule conflict between two siblings. Skip this year's case set if the cases are live political fights.

Fit. A family or co-op that wants a written plan, or a Bowl season at the right age, and will still pick the prompt. Moderate to high load if you host the hour.

Transcript. Never PLATO as the course name. Never Ethics Bowl I as a middle-school credit. English, or a short seminar description inside English.

Wartenberg / Prindle picture-book modules

Picture-book module libraries exist. At 11–15 they are the **edge of the band**: useful at 11–12 or at a mixed-age table, not the default fifteen-year-old object. Open a module. Skip any prompt that is a live fight. Traffic numbers are institute copy, not a trial.

Fit. A family that wants picture-book questions already written down, after opening the module, for an eleven-year-old or a mixed table. Low to moderate load.

Transcript. English. The brand is not the title.

Paper map, then optional sites

Three boxes on paper — Claim / Reason / Objection — are the type this book already taught. Paper first. For eleven and twelve, paper also keeps a child login

off the table.

Sites exist. One classroom site offers instant access without a student account. A paid asynchronous map course lists grades 7–12 on the page this book opened.¹⁴⁴ None is a clearinghouse intervention or a diploma line. Steal the map. Ordinary prompt only.

Fit. A family that wants a visual map: paper, low load. A site, after paper, on the parent’s account, with the COPPA split from the thinking-hour box. A paid course, moderate load, still not a credit.

Transcript. Never Argument Mapping I. English, if the year’s writing was the year’s writing.

Paul–Elder children’s mini-guide

A short published guide for children: twenty-four pages, cartoon characters, elements of reasoning, described for K–6 classroom use — the **floor** of this band.¹⁴⁵ At thirteen to fifteen the children’s mini-guide is the wrong grain. This is a **brand** of teaching materials — a published method with a small book and a set of terms in ordinary language (what do you mean; how do you know) — not a research review of what moves thinking at ages 11–15. Steal “what do you mean?” if it helps. Do not teach the wheel as the science of young-minds thinking. Do not franchise the characters as the family method.

Fit. A family that wants explicit vocabulary in a short booklet, and will still put an object on the table. Optional. Moderate load if the wheel becomes the hour. The wheel is not a credit.

Transcript. Never Paul–Elder. Never the wheel. English, if vocabulary lived inside English.

¹⁴⁴Kialo Edu Instant Access (no student account) and ages-8+ copy: site copy, not a trial. Thinker-Analytix *How We Argue*: grades 7–12, \$25 per student on the page opened — a paid course, not a credit. Rationale / Austhink: 2026 price **UNVERIFIED**. Van Gelder’s college argument-mapping work is university; no 11–15 argument-mapping randomized trial was opened. Home type = three boxes on paper. **Vendor** as to those sites and courses; paper first.

¹⁴⁵Linda Elder, *The Miniature Guide to Critical Thinking for Children*, second edition, 2006: 24 pages, listed at \$20 on the store page opened for this book, cartoon characters, K–6 classroom use — floor of this band. Brand, not a meta-analysis. At 13–15 the children’s mini-guide is the wrong grain.

Workbooks, routines, tests

Puzzle-shaped workbooks and prompt cards exist. Steal a prompt. Skip live-fight cards. The hour keeps its ordinary name. A project framework for “making thinking visible” is a project framework, not a law and not a clearinghouse-endorsed programme for grades 6–9.

Tests. The California Critical Thinking Skills Test is for undergraduate and graduate students. Watson–Glaser is employment and graduate screening. Cornell Level X: grades 5–12+, still a sitting from a publisher, still not the kitchen hour, still not a homeschool credit, still not those college inventories. A K–12 product line of thinking tests is a product line. State tests in the five opened jurisdictions are reading and math. A bump in reading is not proof of a philosophy novel.¹⁴⁶

Fit. A family that wants a puzzle shape or a prompt card, after opening it, and will still look at an object. Tests at this age: not those inventories as the family hour.

A short chooser, not a ranking

Nothing spent, tonight, one student → the chapter already read, plus one question, plus optional one-page reason (low load) — not “Critical Thinking I.”

Kitchen already happening → label claim; one-change check labelled scientific reasoning (low) — not “Lab Thinking 1.”

First stranger-readable object → dated notebook + short written reason + named sources + check (low to moderate) — brand name not a title.

Wants a visual map, no login → paper claim / reason / objection (low) — not “Argument Mapping I.”

Wants a visual map with a site → parent-hosted instant access, ordinary prompt; under-13 split from the thinking-hour box (low to moderate) — site name not a title.

¹⁴⁶California Critical Thinking Skills Test: undergraduate and graduate. Watson–Glaser: employment and graduate screening. Cornell Critical Thinking Test Level X: grades 5–12+, 71 items — a sitting from a publisher, not a homeschool credit, not CCTST. EDUCATE INSIGHT: a K–12 product line. New Jersey Test of Reasoning Skills: built for Lipman (alignment bias). State tests in Texas, North Carolina, Pennsylvania, Virginia, and New York, as opened, are reading and math. A bump in reading is not proof of Lipman. IAPC 2026 U.S. list prices, TPF fees, Thoughtful CPD, and a named A–G course titled “Critical Thinking” remain **UNVERIFIED**.

Wants a paid asynchronous map course → grades 7–12 on the page opened, after paper (moderate) — not a credit.

Wants picture-book questions → a module after opening it (low) — 11–12 or mixed table.

Wants a co-op hour → a toolkit lesson; a facilitated group if one is actually available; parent-led enquiry (moderate to high) — not “P4C Gold.” When the hour is Philosophy for Children, copy **0 months**.¹⁴⁷

Wants a Bowl season → Middle School Ethics Bowl grades 6–8; High School Ethics Bowl grades 9–12, homeschool at discretion; skip live-fight cases (high) — not “Ethics Bowl I” as a middle-school credit. Do not send an eleven-year-old to the high-school Bowl.

Wants novels and a manual → *Harry* 11–12; *Lisa* 12–13; *Suki* 14–15; not Mark (high) — novel title not the course name. Philosophy for Children: **0 months** in 2021.¹⁴⁸

Wants school-shaped training → Thoughtful, formerly SAPERE; UK; no U.S.

¹⁴⁷Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 ≈ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹⁴⁸Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 ≈ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

statute requires it (high) — award level not a grade. Copy **0 months**.¹⁴⁹

Wants explicit vocabulary → the children’s mini-guide as an optional brand, K–6 floor (moderate) — the wheel not a credit.

Wants a test score → Cornell Level X is a sitting from a publisher, not a credit; not the college inventories; not the family hour.

A kitchen that wants a question is not failing the specialist. A specialist hour is not required to make the kitchen lawful. Fit, not rank.

For the student

Tonight’s object is a question you will actually try. Two books, or three boxes on paper, or a walk you were taking anyway. You are not on a shopping task. You do not get a pin for thinking. You get the look.

What “done enough” looks like

You can name why tonight’s object fits this student — usually two library books plus one question, or a paper map — without crowning it a method. Philosophy for Children, when named, sits next to **0 months** from 2021.¹⁵⁰ Paper is on the table

¹⁴⁹Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–11 — the floor of this book’s band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

¹⁵⁰Palak Lord, Ben Styles, and colleagues, Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock security rating; free-school-meals Key Stage 2 reading effect size 0.02 (**0 months** extra progress); whole-cohort reading 0.01 (**0 months**); free-school-meals maths 0.05; whole-cohort maths 0.04 — all **0 months**. Pupil-survey items on explaining ideas and working with different opinions: no significant improvement. Teacher glow 96 percent / 93 percent is not the outcome. 35 of 75 intervention schools were not at expected implementation; six did not implement at all. English Key Stage 2 / Year 6 $\approx$ age 10–

before any app. Titles, if any, are still English, Mathematics, Science, or Social Studies. That is enough.

A parent who felt rusty should be able to say: I know which fit object matches tonight. The student still tries the question. We can do this.

11 — the floor of this book's band, not a U.S. grades 6–9 randomized trial. Average cost on the effectiveness-trial page: £13.50 per pupil per year averaged over three years. Whenever Philosophy for Children is named in this book, copy **0 months**. Access date for sources in these notes: 1 September 2026.

A Note on Sources

Studies named in the chapters are listed in Notes, in one series at the back. That is where the full citations live, so the teaching pages can stay a teaching voice.

Some items the research behind this book did not open stay out of the teaching voice. I did not invent a coefficient, a statute, or a product feature to fill a hole. If a study is in the chapter, it is in the notes. If we could not open it, it is not used as a finding here.

Program hours, credit claims, and product descriptions in the resources chapter are taken from the companies' own pages. Access date 1 September 2026.