

Critical Thinking for Emerging Adults

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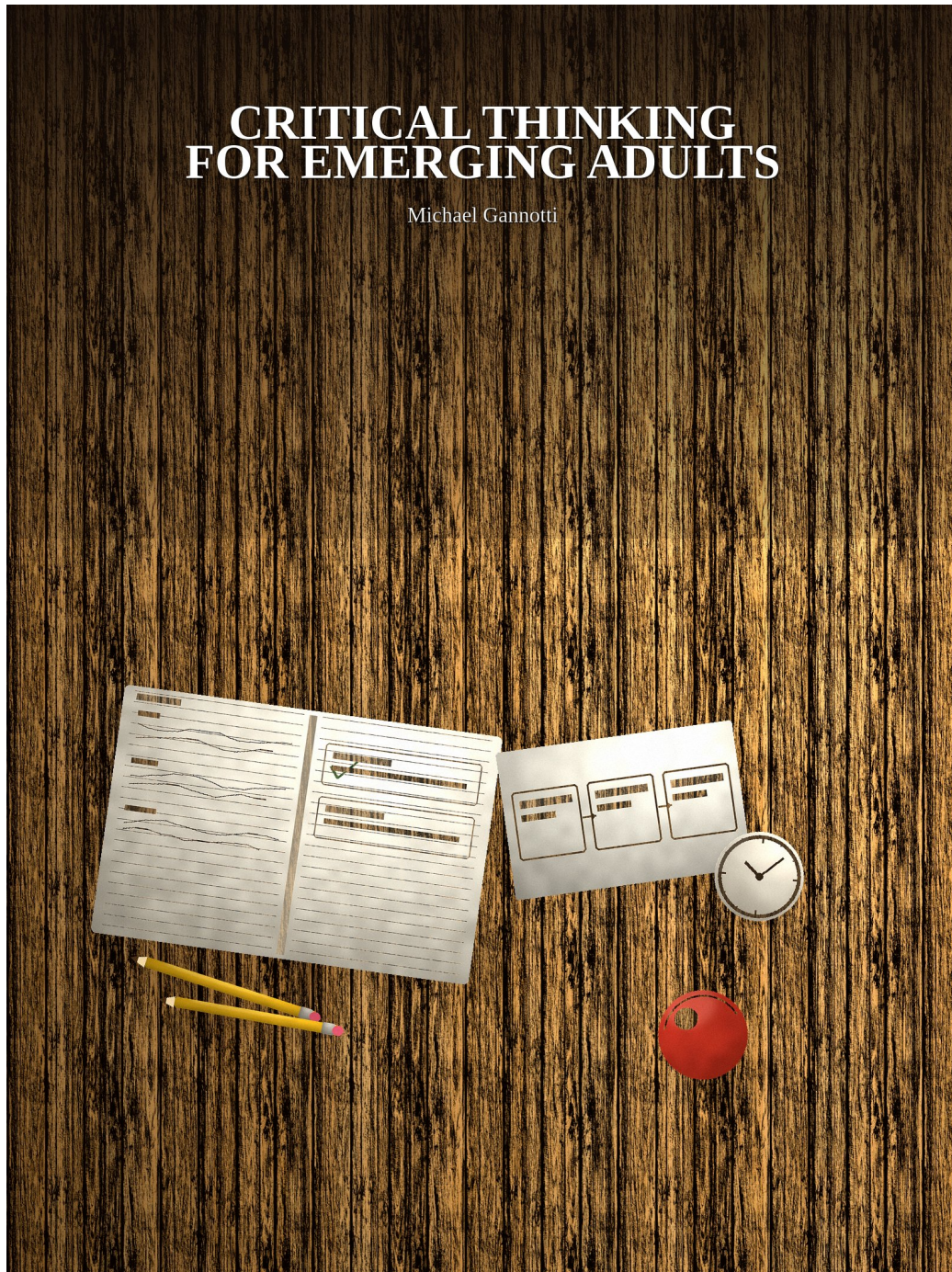


Figure 1: Cover

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This illustrated edition is the teaching-manual of 2 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 you, a student of fifteen to eighteen, and today's move — something they already know, a question worth waiting for, a look at one other thing, and a short written reason a stranger could follow.

I wrote this for a capable, busy, willing parent of a fifteen- to eighteen-year-old. You may be fitting a thinking sit between a job, a younger sibling, and a grocery run. 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 a finished-looking paragraph offered as a reason — 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. Ordinary challenges live at a kitchen table: a recap versus a box score, two forecasts, a spec sheet, a rainfall graph, who should be captain, a claim in a short essay, posted hours versus a clock. A small set of moves, practiced on something the student already knows, with you in the chair.

The cover says *Critical Thinking for Emerging Adults*. Jeffrey Arnett used "emerging adulthood" for the years from the late teens through the mid-twenties — roughly ages 18–25 — and he was explicit that this is not adolescence still in secondary school.¹ This book's band is fifteen to eighteen: late high school. At

¹Jeffrey Jensen Arnett, "Emerging Adulthood: What Is It, and What Is It Good For?," *Child Development Perspectives* 1, no. 2 (2007): 68–73. Arnett first proposed the term for the age period from the late teens through the mid- to late twenties (roughly ages 18–25). Late adolescence "does not work because the lives of persons in their late teens and 20s are vastly different from the lives of most adolescents (roughly ages 10–17). Unlike adolescents, 18- to 25-year-olds are not

fifteen, sixteen, and seventeen they are still in school and still legally minors. At eighteen some have left school; many have not left home. The title is a door. The work is this table. Then we teach.

About 3.4 percent of U.S. students ages 5–17 were homeschooled in 2022–23 — roughly 1.765 million children.² This book’s pond sits in one grade-equivalent cell: about 3.1 percent in grades 9–12. Many readers will not be in that pond — after-school, weekend, or kitchen-table parents of enrolled fifteen- to eighteen-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.³ There is no national homeschool diploma and no national critical-thinking credit.⁴ None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course.⁵ There is no AP Critical Thinking. College admissions maps that

going through puberty, are not in secondary school, are not legally defined as children or juveniles, and often have moved out of their parents’ household.” Access date for URLs in these notes: 2 September 2026. This book’s band is 15–18 / late high school. Arnett is not a critical-thinking paper and not a licence to skip practice.

²Ellena Semples 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 cell 9th–12th 3.1 percent. <https://nces.ed.gov/pubs2024/2024113.pdf>. Latest federal count this book uses; not a 2026 national total. A neighboring 5.2 percent received instruction at home (homeschooled or full-time virtual) and is a different bucket.

³Texas 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.

⁴Texas 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.

⁵Texas 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 mathe-

name English, mathematics, science, and history do not name a critical-thinking area.⁶ 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 history.⁷ The hour in front of you is the work.

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 short essay, a clock beside posted hours. 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. Then they write the reason so a stranger who was not at dinner could follow it. *The Thinking Hour* will teach this in full. Later chapters will not reinvent it.

matics. 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 9–12 required courses omit critical thinking. None of these five opened maps names a critical-thinking course. The parent reads their own statute.

⁶There is no AP Critical Thinking among College Board's listed AP subjects. SAT Subject Tests were discontinued; last international administrations May and June 2021. University of California A–G subject areas name English, mathematics, science, history / social science, language other than English, visual and performing arts, and college-preparatory elective — not a critical-thinking area. NCAA high-school core-course lists may count philosophy as additional core; “critical thinking” is not a named core area. High-school titles a stranger can read remain English, Mathematics, Science, and Social Studies / History.

⁷Jiashan 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. In the 9–12 cells, English 85 percent, social studies 81 percent, and scientific inquiry or experiments 25 percent are neighbors, not a critical-thinking row. 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, philosophy, logic, or informal reasoning. The 2023 First Look did not republish the subject-taught tables. <https://nces.ed.gov/pubs2020/2020001.pdf>.



Figure 2: A kitchen-table thinking hour

Late high-school students 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, and she has not written a reason a stranger could follow until she has. Teens produce argumentative discourse. They are more own-side, and less strategic about the other person’s case, than young adults.⁸ Critical thinking is not

⁸Mark 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. Keith E. Stanovich, Richard F. West, and Maggie E. Toplak, “My-side Bias, Rational Thinking, and Intelligence,” *Current Directions in Psychological Science* 22, no. 4 (2013): 259–64: myside bias shows very little relation to intelligence, including in university

a bicycle they now possess because they can argue with a sibling, drive, or sit an SAT.⁹ Turning eighteen is not a thinking birthday. We practice the moves on the table in front of us.

Critical thinking, in the sentence this book keeps, is reasonable reflective thinking focused on deciding what to believe or do.¹⁰ A student deciding whether a recap’s “dominated” is true, who should be captain, or whether a posting matches a shop review is inside that sentence. “Doing justice to challenges” is now the expected move: the other side is a person in the room, and the written reason has to hold a second side. “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, or *Critical Thinking for Young Minds* with an eleven-to-fifteen-year-old, one pointer each, 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. Young Minds added two-source, graph, counterexample, and steelman. This book adds a short written reason a stranger could follow, and a fuller leave-this-page on ordinary stakes — posted hours versus a clock, a job posting versus a shop review, a claim in a short essay. It is not a reprint of either lesson bank.

samples.

⁹Daniel 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.

¹⁰Robert 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.”

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. 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. 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; a short written reason; inside and 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, or a short essay and its named page — say how they know, write the reason so a stranger could follow it, 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 the large trials that exist were not this age. Later, a short resources chapter names common programs by fit. The transcript still says English or Science or History.

It will not franchise a thinking wheel, prepare a college thinking inventory, or promise a score. There is no guaranteed percentile, no thinking diploma, no certificate of thinking, and no AP Critical 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 fifteen to eighteen. *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 high 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, a storm page, an essay-claim, and posted hours. Politics, religion, identity fights, war, and medical culture-war stay off this table. Method yes. Culture-war content no.

The promise

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

Birthday is not placement. Eighteen is not a window that closes.

Three things have to hold. You understand today's move well enough to hear an own-side "because" offered as a finished argument, a fluent recap offered as a check, and a finished-looking paragraph offered as a reason. The student talks, looks at a second source, and writes a short reason a stranger could follow 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 unaided reason 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, a driving permit, 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; a short written reason; inside and outside the home; approaching disagreement. Records and resources come last. Age bands inside each teaching chapter are 15–16 and 17–18. 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 library card, or a kitchen you already use is working, keep it. Use this book to hear an own-side “because,” to run the hour, and to ask for a short written reason a stranger could follow. Combine honestly. The title is still English or Science or History.

Two ages at one table

You may be teaching a fifteen-to-sixteen-year-old and a seventeen-to-eighteen-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 plus one written line that names the claim and the check is enough. Steelman is two sentences, out loud if needed. The older student can hold a little more: a short written reason plus the check, sometimes a two-sentence steelman on paper, sometimes a closed-window paragraph 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 15–16 band of the moves chapter, whatever their age.¹¹ A seventeen-year-old who still treats a finished-looking paragraph 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 already do those checks unaided, and they are still in a “grade 11 critical thinking workbook” only because the cover says so, skip ahead. Instruction should match what the student actually needs and already knows; instruction for a sixteen-year-old need not be “tenth grade.”¹² A publisher’s grade label is a scope, not a legal grade, and not a transcript line.

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.

¹¹Daniel 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: 2 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. Jeffrey Jensen Arnett, “Emerging Adulthood: What Is It, and What Is It Good For?,” *Child Development Perspectives* 1, no. 2 (2007): 68–73: emerging adulthood is roughly 18–25, not late high school; this book’s 15–16 / 17–18 bands are grains of the same late-high-school moves, not Arnett’s stage.

¹²New 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.” The same principle holds at this table: a sixteen-year-old is not automatically “tenth grade thinking.”

Why this matters tells you what this idea unlocks. **For the parent: understand 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 — age-band moves for 15–16 and 17–18, and a talk box.

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, team practice, and ordinary job looking *are* the practice. **Tools, including AI** is optional, short, and for the adult. The rules live once in *The Thinking Hour*. **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 sixteen.
4. Write one sentence you will actually say. Not a speech. Example: “How do you know?” Or: “What's a second place we could look?” Or: “Can you write that so a stranger could follow it?”
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 — or, at seventeen to eighteen, co-hold it in the room. At fifteen to eighteen they can read a recap, a spec sheet, a graph axis, a short article, a job posting, and a shop review. They can write a short reason a stranger could follow.

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, at a museum as looking, or in ordinary job 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, the spec sheet, the essay-claim, or the job posting.

The five moves from ages 5–10 still work. The four Young Minds added still work. This book does not reprint those lesson banks. Use this book’s added written reason, and the fuller leave-this-page, 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, or when a finished-looking paragraph still has no named check. **If it isn’t clicking** will give you three likely causes and a next move.

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

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, a claim in a short essay, posted hours versus a clock — and doing justice to challenges.¹³ 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. Give them something they already somewhat know.

2. Moves that scale, plus a short written reason. Wait. What do you mean? How do you know? What else could be true? How could we check? Those five still work. Two-source, graph, counterexample, and steelman still work. This book adds one object: a short written reason a stranger could follow. *I claim X because Y. We checked by Z.* Thinking is not a bicycle they now possess because they can argue, drive, or sit an SAT.¹⁴ Name the move. Practice it next Tuesday

¹³Robert 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: 2 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: teens produce argumentative discourse and are more own-side than young adults.

¹⁴Willingham, “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. The five moves scale from *Critical Thinking Skills*

on a similar case. Then they write the sentence. One good question beats five.

3. The student talks and looks at a second source before the tool. You ask one good question and wait. Three seconds is a convention, not a sacrament.¹⁵ 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. Then they look at one other thing. A helper, including an AI tool, stays on your side of the table. It does not sit in the chair during the attempt. At fifteen to sixteen you hold the account. At seventeen to eighteen you co-hold it, still in the room.

4. A finished-looking paragraph is not a check. A smooth “because we wanted it more,” “because the recap said dominated,” “because the graph looks huge,” or a tidy paragraph with no named source can be a starting point. It is not the look.¹⁶ 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, the named page the essay cites, the clock beside the posted hours. If the look goes the other way, they may change their mind — and they correct the written sentence. That is the work. It is not losing.

5. Ordinary stakes. Parent still in the room. Practice on recaps, forecasts, spec sheets, rainfall graphs, who should be captain, a teammate’s “we always start with X,” a claim in a short essay, a job posting versus a shop review. This book teaches *how to approach* disagreement. It does not rehearse live fights as content. For

for *Little Thinkers*; *Critical Thinking for Young Minds* added two-source, graph, counterexample, and steelman. Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Bridge to Argumentative Writing,” *Written Communication* 28, no. 3 (2011): extra essay writing in the comparison group did not produce dual perspective; the missing interlocutor has to have been in the room.

¹⁵Robert 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.

¹⁶Deanna 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 fifteen to eighteen the same *direction of attention* is leave this recap, this spec sheet, this storm page, this essay-claim, these posted hours, 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.

tools: COPPA's under-13 line does not apply here. That is not a thinking birthday and not a licence for an unsupervised chatbot as the only partner.¹⁷ A path through ordinary challenges is the promise. A diploma is not. Birthday is not placement. There is no window that closes at eighteen.

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

¹⁷Children'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. Ages 15–18 are not under 13. That is an account fact, not a licence for unsupervised chat. 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. There is no AP Critical Thinking.

The Thinking Hour

The hour has a shape. Learn it once. Later chapters will give you today's move. 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, a short written reason a stranger could follow, and an unaided exit. Fifteen-to-sixteen may finish in fifteen or twenty minutes; seventeen-to-eighteen may need twenty-five. The shape does not change. The object on the table does.

Sit down having already done the five-minute parent warm-up. Ten to twenty 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 — and those large trials were not this age.¹⁸ The honest pitch is *often enough that the question is familiar*.

¹⁸Education 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 — **not this book's 15–18 band**. 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: 2 September 2026.

1. Warm-up

Two to four minutes. An object 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.¹⁹

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.” 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, a finished-looking paragraph with no named check. 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.

Say: “This one is yours. I’ll be quiet.” If they stall: ask, wait, hint, then model. Not the reverse. 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.

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’s a second place we could look?” Or: “Can you write that so a stranger could follow it?”

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-

¹⁹Daniel 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).

school trial. About three seconds is a convention, not a sacrament.²⁰ Mary Budd Rowe found the same pause in elementary science class. That was science class.²¹ If they are mid-reason, do not cut them off. If the silence is hard, look at the object, not at the student. At fifteen to eighteen the shrug often looks like refusal; do not rescue it. After “write the sentence,” that is task-completion time. At a job, wait in private. 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, the named page, the clock.

A fluent sentence is not a check.²² A finished-looking paragraph is not a check. Leave this sentence and look at one other thing. Hearing a wrong reason, then asking a better question, then naming a better reason if needed, is teaching. If the look goes the other way, they may change their mind. That is the work. It is not losing.

²⁰Robert 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.

²¹Mary 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.

²²Deanna 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 fifteen to eighteen the same direction of attention scales to a recap, a spec sheet, a storm page, an essay-claim, posted hours, 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 is taught (high-school sample); this book does not assign those items.

6. Write the sentence, then unaided exit

Two to eight minutes. Talk first. Then they write. Then look again if the sentence cannot survive the check. Book closed for the exit. No hints. No chatbot. Say: “One sentence. I won’t help. That’s the point.” Ages 15–16: a spoken sentence plus one written line that names the claim and the check. Ages 17–18: a short written reason plus the check, sometimes a two-sentence steelman, sometimes a closed-window paragraph 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

Opening question. Authentic. About what they mean, how they know, what a second source would show, what a graph actually shows, the strongest fair version of the other side, or whether a stranger could follow the written reason. Not “did you have fun” and not “what is the vocabulary word.” Use one: 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’s the strongest version of what they mean? Can you write that so a stranger could follow it?

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: Always? Can we think of a time it wasn’t? Check: What’s a second place we could look? Write or steelman: You may change your mind. Can you write that so a stranger could follow it?

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

What a stuck silence usually means. The question was vague; wait-time after the question was zero; they are guessing what you want; they offered a why-story where a look was asked for; they think “critical” means finding fault; they think steelman means giving up; they think a finished-looking paragraph is already a check. Debug, once: shrug → a smaller question and wait. Talks forever → “write one sentence.” Session becomes a fight → stop. Pose, wait, and point back at the object.

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, or a fluent paragraph, can be named. It is not yet a check.
4. Two sources. Leave this page and look at one other thing: the box score; two storm pages; the spec sheet; the named page; posted hours versus the clock.
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. A finished-looking paragraph is not a check.
8. Steelman. Say their claim in the strongest fair way. Then answer *that*. Asking a machine to write the steelman so you can paste it is write-my-reason.
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 spec sheet, the essay-claim, or the job posting.²³

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 dated notebook, a short essay.

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. A sentence a stranger could follow.

²³Willingham, “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, Ulrich 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, snack, or essay-claim. This is a translation, not a 15–18 trial of the handbook.

The skill. How do you know. Two-source. Graph. Counterexample. Steelman. Written reason plus the check.

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 (5–10 min); paper argument map (8–15 min); steelman on paper (8–15 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.²⁴

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

“Outside” means the walk, the store, the library, the museum as looking, ordinary team or job 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 after, not during (3–10 min); ordinary job looking after the shift — posted hours versus clock (3–10 min; no public quiz, no undercover audit); homework graph in the car (5 min; don’t do it for them).

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, a shop, or a supervisor.

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 9th–12th cell the share was still more than half.²⁵ A job is ordinary

²⁴Zhe 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.

²⁵Jiashan 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

looking after the shift. Posted hours versus the clock is the object, not an audit of a workplace.

The written-reason shape, once

Chapter 6 owns this move. Later chapters fill the claim.

After talk: **I claim X because Y. We checked by Z.** Optionally a second sentence: **Someone who disagrees would say...** Dated. Stimulus named. Sources named. A stranger who was not at dinner could follow it.

Talk first. Write. Then look. If the sentence cannot survive the check, correct the sentence. That is teaching.

It is not a five-paragraph essay, timed test practice, a college thinking inventory, or a 4,000-word research paper. Extra essay writing without someone in the room is not the intervention: in one classroom comparison, the group that wrote more essays stayed near one-third dual perspective.²⁶ The missing interlocutor has to have been at the table. History-class studies at this age licence the *shape* — more than one document, a named writing move, an adult who looks at the product — not a packet from another course.²⁷

Ten to twenty minutes. One sentence plus the check is enough.

library as a source of curriculum and books in 2016; 9th–12th 58 percent. The 2023 First Look did not republish that table.

²⁶Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Bridge to Argumentative Writing,” *Written Communication* 28, no. 3 (2011): after dense dialogic practice, dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison; extra essay writing in the comparison group did not help. Copy the shape (a reason, a counter, a second look, sometimes the other person’s strongest case, then a short written reason). The paper’s later topics are not exercises in this book.

²⁷Jeffery D. Nokes, Janice A. Dole, and Douglas 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; multiple texts beat textbook on sourcing and corroboration. Susan De La Paz and Mark K. Felton, “Reading and Writing from Multiple Source Documents in History: Effects of Strategy Instruction with Low to Average High School Writers,” *Contemporary Educational Psychology* 35, no. 3 (2010): 174–92; grade 11. Avishag Reisman, “Reading Like a Historian: A Document-Based History Curriculum Intervention in Urban High Schools,” *Cognition and Instruction* 30, no. 1 (2012): 86–112: 236 eleventh-graders; historical thinking. Labelled history-class evidence, not a generic critical-thinking gym.

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. COPPA's under-13 line does not apply to fifteen-to-eighteen. That is not a thinking birthday and not a licence for unsupervised chat.

Ages 15–16 (parent holds the account). Parent in the room. A labelled SCRIPT after the try. No unsupervised chatbot as the only partner. The unaided reason is the student's.

Ages 17–18 (parent co-holds). The student may type in the parent's presence, on an account the parent can open. Co-holding is not unsupervised. Extra questions still pass the parent. Live controversy still does not enter the prompt. After any tool, a closed-window paragraph. Exam rules that treat AI-generated answers as not the student's work still apply to the student's own submissions.

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, a pretend expert, or a Civic Online Reasoning item.
- Use a labelled **SCRIPT** only **after the student tried** — a short spoken or written sequence for *you* to say, or a labelled sequence the student may read after the attempt, not a paragraph for the student to copy as their reason, their essay, or their steelman.
- 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.

You **may not**:

- Park an **unsupervised chatbot** as the student's only partner.
- Treat turning 16, 17, or 18 as a private-channel permission slip.
- Ask the tool to **write the student's reason, essay, or steelman**, then paste that text as theirs.
- Ask the tool to **invent an expert identity** ("you are a sports-fairness professor"; "you are a hiring manager") 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, whether the shop is closed, what the rainfall numbers were, what the job posting requires).
- Hand the student an **agent** (Hermes Agent, Grok Bot, or any cloud-computer worker) as a thinking partner.

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 and then cut the unaided exam.²⁸ 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. In a university writing study, authors warned of "metacognitive laziness" — college writing, not a fifteen-to-eighteen trial.²⁹ Detectors mislabelled more than half of some human essays as machine-written.³⁰ Language models invent sources.³¹ 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.³²

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 is a third Grok. Game

²⁸Hamsa 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. 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 this age's math trial, not a critical-thinking trial. The transferable caution is the crutch.

²⁹Yizhou Fan, Luzhen Tang, Huixiao Le, Kejie Shen, Shuyi Tan, Yueying Zhao, Yuan Shen, Xinyu Li, and Dragan Gašević, "Beware of metacognitive laziness: Effects of generative artificial intelligence on learning motivation, processes, and performance," *British Journal of Educational Technology* 56, no. 2 (2025): 489–530: 117 university students, English writing task; authors warn of "metacognitive laziness." College writing. Not a 15–18 randomized trial.

³⁰Weixin Liang, Mert Yuksekogul, Yining Mao, Eric Wu, and James Zou, "GPT detectors are biased against non-native English writers," *Patterns* 4, no. 7 (2023): 100779: average false-positive rate on human TOEFL essays 61.22 percent.

³¹William 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.

³²College Board, "2026 AP Exam Terms and Conditions," updated 27 April 2026, Section 4: no part of test answers, work, or submission may be generated in whole or in part using any AI tools. Some course projects are open if you cite. AP Computer Science Principles is a computer-science exam: that guidance is CS hygiene, not this book's thinking statute.

artist makes pictures. A chatbot answers in a window. An agent has tools and can keep going. Neither is a thinking partner.

COPPA covers children under 13. It does not gate fifteen to eighteen. Keep accounts, logs, and keys where the parent can open them.³³

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 fifteen-to-sixteen into seventeen-to-eighteen is more miles on the same road, not a new faculty and not a new stage. Revisit the same question next Tuesday.³⁴ After a look, let them say “I used to think... now I think...” Fridge ground rules — we listen; we ask what you mean; we give a reason; we can change our minds; we write a reason a stranger could follow — then the next real disagreement. Posting the rules is not practice. Placement is by skill, not birthday. A diploma is not. There is no window that closes at eighteen.

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. Then: “Can you write that so a stranger could follow it?” Exit: “One sentence. I won’t help.”

You can run that hour. There is no national table of thinking minutes for the kitchen.³⁵ Later chapters will say: run the session as in *The Thinking Hour*.

³³Children’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.

³⁴Willingham, “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.

³⁵No IES or NCES page opened on 2 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

Critical Thinking for Emerging Adults

Michael Gannotti

2 September 2026



Figure 3: A kitchen table holding a recap page, a box score with unreadable type, a window, two closed books, and a dated notebook.

Why this matters

How do you know we dominated?

The recap is still on the table. Someone used the word as if it were a score. Your student nodded, or argued, or quoted the article. The question is not a vocabulary quiz. It is the work of this book, in one breath.

Critical thinking, in the sentence this chapter keeps, is reasonable reflective thinking focused on deciding what to believe or do.³⁶ A student deciding whether last night's recap told the truth is inside that sentence. So is a student deciding who should be captain. So is a student deciding whether the posting on the board is the job they think it is. Belief and action both count. A fluent "because" is not yet either.

This idea unlocks a week you can actually teach. You do not need a philosophy degree. You need to hear "because we wanted it more" as a story about *why* a result might have happened, not as a look at the box score. You need one good question, a wait, and something on the table the student already somewhat knows. Then, when the claim can bear it, a short written reason a stranger could follow.

The struggle is worth it because late high school is full of finished-looking sentences. Recaps. Forecasts. Short essays. Job postings. Shop reviews. A teammate's "we always." Those sentences already decide what to believe and what to do. The move is to treat them as claims, not as weather.

If you only remember one thing from this chapter: they already think in a domain they know. Thinking is not a bicycle they now possess because they can argue with a sibling, drive, or sit a Saturday test. Own-side talk is still the default. Dual focus is still the work. Turning eighteen is not a thinking birthday.

This book's cover says *emerging adults*. Jeffrey Jensen Arnett used that phrase for roughly ages 18–25, and he was explicit that it is not adolescence still in secondary school.³⁷ This book is late high school. Ages 15–18. Say that once. Then teach.

³⁶Robert H. Ennis, "The Nature of Critical Thinking: Outlines of General Critical Thinking Dispositions and Abilities" (2013, last revised September 2015), and the public page last revised 11/26/10 on criticalthinking.net: "Critical thinking is reasonable reflective thinking focused on deciding what to believe or do." The long outline "does not specify grade level."

³⁷Jeffrey Jensen Arnett, "Emerging Adulthood: What Is It, and What Is It Good For?," *Child Development Perspectives* 1, no. 2 (2007): roughly ages 18–25; late adolescence (roughly 10–17) is still secondary school, still legally a minor, often still at home. This book's band is 15–18 / late

For the parent: understand it yourself

Here is the everyday picture.

Someone at the table says the team dominated. You ask, “How do you know we dominated?” They say, “Because we wanted it more.” That sentence can be true as a feeling. It is not yet a check. Wanting is a why-story. The box score, time of possession, shots on goal, or the actual starting five — those are looks at *whether* the claim is true.

Here is the precise picture.

Robert Ennis’s public sentence is the one this book keeps: critical thinking is reasonable reflective thinking focused on deciding what to believe or do. The concept is not negative.³⁸ “Critical” in a fifteen-year-old’s house does not mean “find the fault in people.” Doing justice to challenges is now the expected move: the other side is a person in the room, and the written reason has to hold a second side. Graphs sit on Ennis’s list as a later ability. That licenses a rainfall graph later in this book without turning you into a statistics teacher. The long outline of dispositions and abilities does not specify grade level. It is not a grades 10–12 syllabus. Keep the sentence. Practice it on ordinary stakes.

Beside Ennis, Matthew Lipman named three features as aims: criteria, self-correction, and context.³⁹ On a captain vote, that means naming what you are going by (skill, fairness, who the team will follow), being willing to change the sentence when last week’s jobs do not match the claim, and noticing that “captain” in this gym is not “captain” on a different team. Those are aims for the hour, not a branded programme and not a trial result. A community of inquiry is a tone: we listen, we give reasons, we can change our minds. It is not a diploma.

Two refusals sit beside the sentence.

First: they already think. Daniel Willingham’s line is the one that stops the waiting.

high school.

³⁸Ennis, same sources: the concept is not negative; the brief conception includes developing a reasonable position, “doing justice to challenges.” Ability #4 (2015 numbering) is elementary graphs and maths. Disposition 9: take a position and change it when evidence and reasons are sufficient.

³⁹Matthew Lipman, *Philosophy Goes to School* (Philadelphia: Temple University Press, 1988): thinking based on criteria, self-correcting, and sensitive to context, treated here as aims, not as trial evidence. Community of inquiry as an aim, not an EEF result.

Critical thinking is a type of thought that even three-year-olds can engage in — and even trained scientists can fail in.⁴⁰ If a three-year-old can do it in a known domain, a fifteen-year-old is not waiting for a switch to flip. Mark Felton and Deanna Kuhn compared young adolescents with young adults from the same population talking about a public question. The teens produced reasons. They were not empty. They were more occupied with keeping the talk going, and less strategic about the other side, than the young adults.⁴¹ Ages 16–17, in a history-class study of multiple texts, used sourcing and corroboration more after they had more than one document.⁴² Start now, with a recap, a forecast, a captain vote, a short essay, a posting. Do not wait for “formal operations,” for sixteen, or for Arnett’s 18–25.

Second: thinking is not a bicycle. People who have tried to teach it have often assumed that, like riding, once you learn it you can apply it anywhere. Cognitive science says otherwise. The processes of thinking are intertwined with what is being thought about. You can teach maxims. Without knowledge of *this* claim, and practice on *this* kind of object, the maxim will not implement.⁴³ Willingham’s famous analog — a band-marching word problem that was mathematically the same as a garden problem solved minutes earlier — is a word-problem study, not a 15–18 finding. Few people saw the analog; a hint helped some, not most. Cite it as the constraint that still binds a fluent sixteen-year-old. Fluency of speech is not evidence that a general faculty has been installed. A senior who can produce a confident “because” about a sport she plays will look like a non-thinker in a domain she does not know. That is the architecture of thought, not a character

⁴⁰Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator* (Summer 2007). Thinking is not a bicycle skill; processes are intertwined with domain knowledge; even 3-year-olds can engage in it in a known domain, and even trained scientists can fail. The 19 percent / 35 percent analog is a word-problem study, not a 15–18 finding.

⁴¹Mark Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, nos. 2–3 (2001): 33 seventh- and eighth-graders compared with 31 community-college young adults from the same inner-city population; teens produced argumentative discourse, were more preoccupied with producing the dialogue, and were less strategic than the young adults. The lab topic is not this book’s exercise type; the finding is own-side default.

⁴²Jeffrey D. Nokes, Janice A. Dole, and Douglas J. Hacker, “Teaching High School Students to Use Heuristics While Reading Historical Texts,” *Journal of Educational Psychology* 99, no. 3 (2007), abstract: ages 16–17; multiple texts beat textbook on sourcing and corroboration; contextualization did not move. Full PDF cells not independently verified for this chapter.

⁴³Daniel T. Willingham, “How to Teach Critical Thinking” (NSW Department of Education occasional paper, 2019): generic programs have had limited success; transfer 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.”

flaw to be drilled away before graduation.

Own-side is still live. Felton and Kuhn's teens were more own-side, less strategic. Kuhn later showed that young adolescents can address an opposing position when you explicitly ask, and often will not if you do not.⁴⁴ Unprompted dual-function arguments — sentences that both support one side and counter the other — showed up less than a third of the time in that young-adolescent group; adults in the same kind of task managed them about half the time. Dual focus is promptable, not default. In a three-year classroom study, dense dialogic practice moved dual-perspective writing on a new essay to 79 percent in the experimental group versus about 29 percent in a comparison group that wrote more essays.⁴⁵ Extra essay writing without an interlocutor did not help. The missing other person has to have been in the room. Keith Stanovich, Richard West, and Maggie Toplak found that myside bias — evaluating evidence in a way that favors your own prior view — shows very little relation to intelligence, including in university samples.⁴⁶ Being “smart,” scoring well on a Saturday test, or turning eighteen does not cancel own-side. Ask the other-side prompt. Then look.

A few more limits, said once.

What develops, in Kuhn's developmental model, is meta-knowing: thinking about one's own thought.⁴⁷ Absolutism is common in childhood and can last. Multiplism — “that's just your opinion” — becomes prevalent at adolescence. Evaluativism, where reasons can be better or worse, is a minority adult achievement. There is large individual variation. There is no Piaget stage calendar in this book. There is no critical-thinking gene. There is no window that closes at 18. Kuhn and Susan Pearsall are explicit that coordination of theory and evidence may not develop fully

⁴⁴Deanna Kuhn and Wadiya Udell, “Coordinating Own and Other Perspectives in Argument,” *Thinking & Reasoning* 13, no. 2 (2007): young adolescents can address an opposing position when explicitly asked; unprompted dual-function arguments less than a third of the time; adults about half.

⁴⁵Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Vehicle for Developing Young Adolescents' Thinking,” *Psychological Science* 22, no. 4 (2011): dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison; extra essay writing in the comparison group did not help. Copy shape, not the paper's later topics.

⁴⁶Keith E. Stanovich, Richard F. West, and Maggie E. Toplak, “Myside Bias, Rational Thinking, and Intelligence,” *Current Directions in Psychological Science* 22, no. 4 (2013): myside bias shows very little relation to intelligence, including in university samples.

⁴⁷Deanna Kuhn, “A Developmental Model of Critical Thinking,” *Educational Researcher* 28, no. 2 (1999): meta-knowing develops; absolutism common into adolescence; multiplism becomes prevalent at adolescence; evaluativism a minority adult achievement.

even by adulthood.⁴⁸ Iroise Dumontheil, Ian Apperly, and Sarah-Jayne Blakemore found that adolescents aged 14.0–17.7 still made more errors than adults on a task that required using someone else’s viewpoint under load.⁴⁹ That is continuing development, not a closing gate.

Peter Facione’s CCTST is a college-level test.⁵⁰ It is not this book’s meaning. SAT and ACT graphics and paired passages are reading objects. They are not critical-thinking tests, and they do not measure whether the student will use dual focus when unprompted.⁵¹

If a younger book in this house already named five moves for ages 5–10, and a middle book named two-source, graph, counterexample, and steelman for ages 11–15, those moves still work. This book is not a reprint of those lesson banks. The objects here are a recap, a captain vote, a forecast and the sky, “the article said,” and a claim in a short essay. What this book *adds*, later, is a short written reason a stranger could follow, and a fuller leave-this-page on ordinary stakes. One pointer. Then teach at 15–18.

Wrong answers you should be able to hear

These are illustrations, not portraits of real families.

1. **“Because we wanted it more.”** This is a why-story offered as a check. Hear it. Name it kindly: that is a reason the result *might* have happened. Then: how do you know the domination happened? Point at the box score, the table, last week’s list.
2. **“The recap said we dominated.”** Fluency is being offered as a look. One speaker repeated a verb. Ask what *dominated* is being asked to mean, and what a second place would show.

⁴⁸Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1 (2000): coordination of theory and evidence may not develop fully even by adulthood; no consolidation at 15 or 18 as a teaching calendar.

⁴⁹Iroise Dumontheil, Ian A. Apperly, and Sarah-Jayne Blakemore, “Online Usage of Theory of Mind Continues to Develop in Late Adolescence,” *Developmental Science* 13, no. 2 (2010): Adolescent II (14.0–17.7) still made more Director-condition errors than adults (19.1–27.5).

⁵⁰Peter A. Facione, *The California Critical Thinking Skills Test* documentation (1990 ERIC): college-level. SAT and ACT are literacy objects, not this book’s meaning.

⁵¹Philip C. Abrami et al., “Strategies for Teaching Students to Think Critically: A Meta-Analysis,” *Review of Educational Research* 85, no. 2 (2015): high-school cell ages 16–18, $k = 71$, $g = 0.25$ on standardised critical-thinking tests, not kitchen-table judgment. Combination $g = 0.57$ is 19 mixed-age studies, not this band. Named here as a limit, not as this week’s promise.

3. **“That’s just your opinion.”** Multiplism, said out loud. Two forecasts can both be “opinions” in that sense, and one of them can still be better supported by looking out the window. Who should be captain is a judgment under criteria, not a truce in which no reasons apply.
4. **“Critical thinking means finding what’s wrong with people.”** The English word *critical* can sound like that. Ennis’s concept is not negative. The job is deciding what to believe or do, with reasons, and doing justice to the other side.
5. **A finished-looking paragraph with no named source, offered as already done.** Topic sentences are not a check. Ask: can a stranger who was not at dinner follow how you know?

Five-minute parent warm-up

Before the lesson, take one claim already in the house: a recap, a forecast, a sentence in a short essay, a posting on the fridge. Ask yourself, silently, “How do I know?” Notice whether your first answer is a feeling, a hope, a fluent verb, or a look. If it is a feeling, name a second place you could look. You are not deficient for having a first why-story. You are practicing the ear this week needs. That is what you can learn this week: Ennis’s sentence in ordinary language, how to hear “because we wanted it more” as a why-story, and that Arnett’s 18–25 is not a licence to skip the prompt.

How to teach it this week

Session shape

Warm-up (2 minutes). Put the object on the table. A recap and, if you have it, a box score. Or two forecasts and a window. Or a short paragraph the student wrote. Say: “We’re going to decide what to believe about this sentence, and how we know.”

Short model (2 minutes). You take the first claim. Out loud: “The recap says we dominated. How do I know? I wanted it to be true. That is a why-story. The box score is a look.” Stop. Do not finish their reason for them.

Student attempt (5–8 minutes). They take the next sentence. You ask one good question. You wait.

One good question. The exact wording you can say this week:

“How do you know we dominated?”

If the object is not a recap, keep the shape: “How do you know it rained?” “How do you know they should be captain?” “How do you know the article’s date?” “How do you know that sentence is true?”

Mixed practice (5 minutes). One more claim, smaller. If the first was the recap, the second can be the sky, or one line of the essay.

Exit ticket (2–4 minutes). One spoken sentence, then, if the claim can bear it, one written line: *I claim X because Y. We checked by Z. Dated. Stimulus named. A stranger who was not at dinner could follow it. This book names that shape here. A later chapter owns the grain. For this week, one line is enough.*

Exact wording you can say

- “How do you know we dominated?”
- “What do you mean, *dominated*?”
- “Did you see, or did someone tell you, or do you hope so?”
- “What else could be true?”
- “What’s a second place we could look?”
- “You may change your mind. That is not losing.”
- “Can you write that so a stranger could follow it?”

Ask one. Wait. A slow three is a convention, not a sacrament.⁵² Stahl called this think-time; the origin is classroom instruction. Rowe’s two waits come from science class. They are not a homeschool trial. After they stop, wait again. If they are mid-reason, do not cut them off. Look at the box score, the window, or the page, not at the student, if the silence is hard. At 15–18 the shrug often looks like refusal. Do not rescue it. After “write the sentence,” that is task-completion time, not a three-second wait.

First try-it for the student

The sports claim, kitchen, 5–10 minutes. Recap already on the table, or memory of *this* game plus a box score if you have one. Opening: “How do you know we

⁵²Robert J. Stahl, “Using ‘Think-Time’ and ‘Wait-Time’ Skillfully in the Classroom,” ERIC Digest ED370885 (1994): think-time; about 3 seconds as a convention; classroom-origin. Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables” (NARST / *Journal of Research in Science Teaching*, 1972/1974): science-class wait. Not a homeschool trial.

dominated?” The skill is deciding what to believe. Wanting is a why-story. The box score is evidence *that*.

How to fade help

First time: you model the why-story and the look. Second time: you ask the question and wait. Third time: they ask themselves “how do I know?” before you do. If they still offer a why-story, name it once, then point at the object. If they write a fluent paragraph with no check, ask for the line a stranger could follow. You may name a better reason if the claim is false. Hearing a wrong reason, then asking a better question, then naming a fact if needed, is teaching. Silence in the face of a false reason is not kindness.

When to stop talking

When they have offered a reason, looked at one other thing, and either kept the claim or changed it. Ten to twenty minutes of a named move is the right ambition. If the table is becoming a fight, stop. Postpone. Pick a smaller claim. The curriculum is the map. The hour is triage.

Ages 15–16

Fluent own-side reasons in domains they know are expected, not a failure. Dual perspective *when asked* is the win for the week. A spoken sentence plus one written line that names the claim and the check is done enough. Steelman two sentences, out loud if needed. Parent holds the account if a tool is used later; that rule lives in the thinking hour. Brown and Gummerum’s younger cell (11–16) is the neighbourhood of this band: look still often outruns meaning.⁵³ Prompt “what would someone who disagrees say?” You will probably have to keep prompting.

Ages 17–18

More miles on the same road, not a new stage. A short written reason can be asked more regularly. The other side can be held in ink, not only in speech. A job posting versus a shop review, or posted hours versus a clock, can enter as a weekly object. Nokes’s 16–17 sample sits here: multiple texts help sourcing when they are supplied. College-adjacent *reading* of a short claim-plus-graph is literacy-test familiarity, not installation of a faculty. Parent co-holds any tool account;

⁵³Sarah Brown and Michaela Gummerum, selective-trust study (2025): younger adolescents 11–16 versus older 16–20; fifteen sits in the younger cell; look still often outruns meaning. Accuracy prime did not move scores.

co-holding is not unsupervised. AP Exam Terms still apply to the student's own submissions. Dual focus is still the work. Myside is still live in university samples. Evaluativism is still not a group norm. Same moves. Different grain. Neither band is "too young to reason." Neither band is "ready to skip practice because they are emerging adults."

Practice that actually builds learning

Kitchen, walk, store, library, museum as looking, and ordinary team looking *are* the practice. They do not replace the named move. Each try-it below names time, materials, safety, the fun, and the skill. At least one lives inside the house. At least one lives outside.

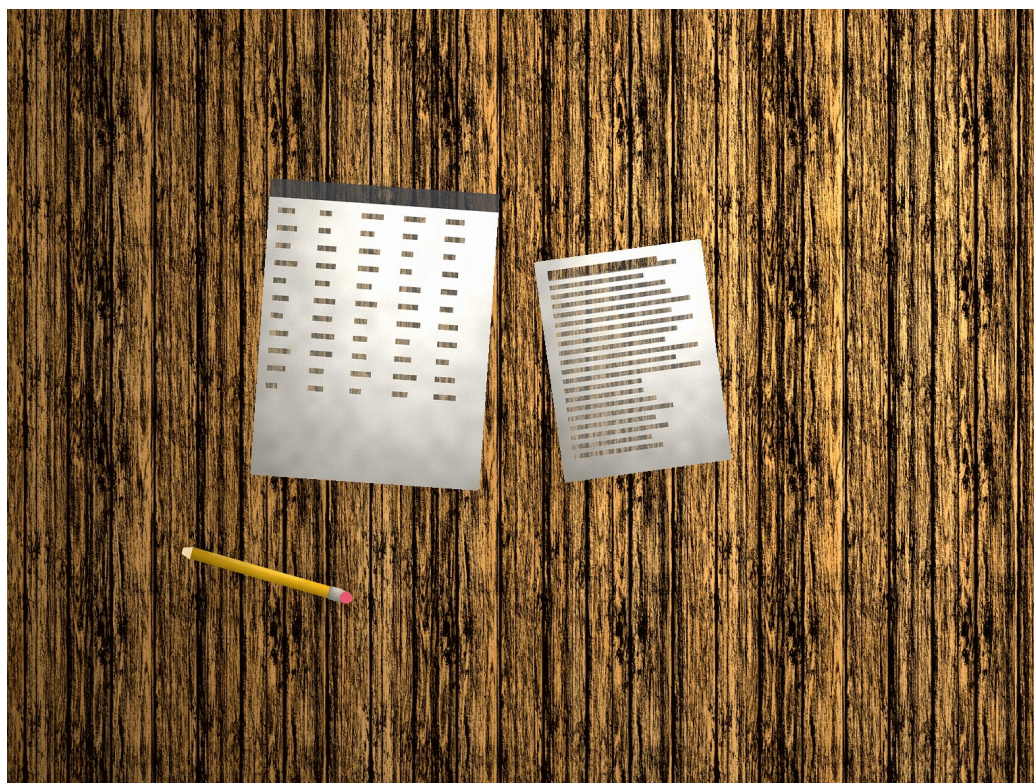


Figure 4: A recap page beside a box score, both with unreadable type, no league mark, no faces.

Try-it: Sports claim (in-home, or after a game)

Time. 5–10 minutes.

Materials. A recap already on the table, or memory of *this* game plus a box score if you have one. A dated notebook.

Safety. No humiliation of a player. No sideline interrogation during the game. After, not during. Curious, not a courtroom.

The fun. Catching the verb. “Dominated” is doing a lot of work.

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

Ages 15–16. Spoken: what *dominated* means; one look at the table. One written line if the claim can bear it.

Ages 17–18. The written line names the recap and the box score as two speakers. Optional second sentence: someone who disagrees would say...

Illustration, not a reported family: a recap says the home side dominated. Possession was nearly even. Shots favored the other side. The student says, “We wanted it more.” You wait. Then: “How do you know we dominated?” They look. They change the sentence, or they keep it and name a different check. Either is thinking if the look happened.

Try-it: Who should be captain (out-of-home cousin: hallway or after practice)

Time. 5–10 minutes, when it actually happens, or as a calm replay.

Materials. The actual decision, or a hypothetical about *this* team. Named criteria: skill, fairness, who the team will follow, who talks to the official. Last week’s actual jobs if you have them.

Safety. No humiliation. No audience of neighbours. No culture-war sports. Ordinary team looking.

The fun. Being heard.

The skill. Decide what to do, with criteria, not volume. Prompt: what would someone who disagrees say? Then, if ready, write four sentences that hold that

point.

Ages 15–16. Name two criteria. Say the other side so they would nod. One look at last week's jobs.

Ages 17–18. Write the reason so a stranger could follow the criteria and the check. Hold the other side in a second sentence.

This is Ennis's *do* half of the sentence. Belief is whether the recap is true. Action is who wears the armband. Both need reasons. Volume is not a criterion.

Try-it: Forecast versus sky (out-of-home: doorstep or walk)

Time. 3–8 minutes of a walk you were taking anyway, or at the door.

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

Safety. Ordinary looking. Roads. No lecture to a stranger. Not a climate-policy seminar. Not Forest School.

The fun. Being right, or changing your mind.

The skill. Testimony versus observation. "I thought it would rain." Look.

Ages 15–16. One forecast, then the sky. Say whether you saw, were told, or hoped.

Ages 17–18. Two forecasts, then the sky. Name who issued each, for which town, and when. Then look. You do not have to pick a team.

This is the smallest leave-this-page in the book. A later chapter owns the fuller habit. This week, the window is enough.

Try-it: "The article said" a date or a storm (in-home: sofa; out-of-home cousin: library)

Time. 8–15 minutes with a page you were already reading. Library cousin: 10–20 minutes on two books the student chose.

Materials. One short article plus a second named page (encyclopedia entry, later chapter, parent-opened source). At the library: two books on one safe topic — an animal, a storm, a sport. Skip live-controversy pages. If the display is a live fight, walk to a different bay.

Safety. Ordinary reading. Parent still picks the prompt.

The fun. Catching the mash: a fluent “the article said” offered as a check.

The skill. One source, fluent. Second source. How do you know the date, the total, the verb?

Ages 15–16. Open the second named page. Say where they agree.

Ages 17–18. Name both sources. Say where they agree and where they do not. Write the line a stranger could follow.

Try-it: A claim in a short essay (in-home: table)

Time. 8–15 minutes.

Materials. A paragraph the student wrote, or a sample paragraph about a match, a shop, a storm. The named page it cites, opened if there is one.

Safety. Not a humiliation of the writer. The object is the sentence, not the person.

The fun. Catching a finished-looking sentence that has no check.

The skill. Ennis believe-or-do in ink. A why-story can wear a topic sentence. A fluent paragraph is not yet a look.

Ages 15–16. Circle the claim. Ask how they know. Open the named page if there is one.

Ages 17–18. Rewrite so a stranger could follow the because and the check. Optional: someone who disagrees would say...

One incorrect example to diagnose

Illustration: a short essay about last Saturday’s match. Opening sentence: “We dominated because we wanted it more, as the recap made clear.” The paragraph is tidy. There is a topic sentence. There is a “because.” There is no box score, no time of possession, no named second page. The mash is Kuhn’s mash wearing school clothes: an explanation of why the claim *makes sense* offered as evidence *that* the claim is true.⁵⁴ Your move is not a grade. Your move is: “How do you

⁵⁴Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): young children have difficulty differentiating explanation of why a claim makes sense from evidence that the claim is true; substantial variation remains among adults.

know we dominated? What's a second place we could look?" Then, if needed: "Wanting is a why-story. The table is a look. You may change the sentence."

Talk box

Exact opening question. "How do you know we dominated?"

Not: "What is critical thinking?" Not: "Did you have fun?" Not: "What is the vocabulary word?"

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

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. Can you write that so a stranger could follow it? You thought X; we looked; you can say the new thing.

How to wait. After you ask, a slow three. After they stop, wait again. If they are mid-reason, let them finish. Look at the object, not at the student, if the silence is hard. At 15–18 the shrug often looks like refusal; do not rescue it. At a job or after practice, wait in private. Do not cite Rowe as a homeschool trial. Stahl's think-time is classroom-origin.

What a stuck silence usually means. They offered a why-story where a look was asked for. Wait-time 1 was zero. They are searching for a word. They are guessing what you want. The question was a recitation item in disguise. They think "critical" means finding fault. They think listening means giving up the starting spot. They think a finished paragraph is already a check.

Debug, one at a time. Shrug / "idk" → smaller question, wait, do not rescue. Guessing what you want → wait again and "what do *you* think?" Doubling down on a wrong reason → hear it, steelman it, then a look or a named fact, then correct the written sentence. Talks forever with no reason → "what are we going by? Write one sentence." Adult lectures → silence is the treatment. Session becomes a fight → stop, postpone, pick a smaller claim.

Blocked for a new move: this week the new move is hearing a why-story and asking how they know. Mixed, later: when to use "how do you know" versus

“why might that be” — Chapter 3 keeps those apart. When to leave the page — Chapter 4. When to write the full stranger-readable reason — Chapter 6.

For the student

You already think. This chapter is not here to install a new brain. It is here to name what you are already doing, and to ask one better question of it.

Critical thinking, in the sentence we are keeping, is reasonable reflective thinking focused on deciding what to believe or do. “Critical” does not mean “find the fault in people.” It means: this claim, this choice, with reasons, and a fair look at the other side.

Tiny worked example.

The recap says we dominated.

You might think: we wanted it more.

That can be true as a feeling. It does not yet answer how you *know* the domination happened.

A look: the box score, time of possession, shots, who actually started.

If the look goes the other way, you may change the sentence. That is not losing. That is the work.

Try 1. Take a recap, or a forecast, or one sentence you wrote. Answer out loud: How do you know? Did you see, were you told, or do you hope so? Then look at one other thing.

Try 2. Write one dated line: *I claim X because Y. We checked by Z.* A stranger who was not at dinner should be able to follow it. If the look kills the sentence, correct the sentence.

Explain it back. In your own words: what is the difference between a why-story and a look? Use last Saturday, or the sky, or a sentence you wrote. Do not use a definition you memorized.

Challenge. Find a finished-looking paragraph — yours or a sample about a match, a shop, or a storm — and mark the claim. Then mark the check. If there is no check, name a second place you could look, and look.

You are allowed to wait. You are allowed to change your mind. You can say the other side fairly. You can write a reason a stranger could follow. None of that is a thinking diploma. It is this week's try.

If it isn't clicking

Diagnostic 1. Every answer is a why-story. "Because we wanted it more." "Because it's fair." "Because the recap said."

Next move. Shrink the question. "Did you see it, or were you told, or do you hope so?" Put the box score, the window, or the second page on the table *before* you ask again. Point at the object, not at the student. If the reason is still wrong after the look, name the fact. Correct the sentence. That is teaching.

Diagnostic 2. They think "critical" means finding fault, so they go quiet, or they go sharp.

Next move. Say Ennis's sentence in ordinary language once: we are deciding what to believe or do, with reasons. We are not hunting people. Practice on a recap, not on a person in the room. If the table is hot, postpone. Pick the sky.

Diagnostic 3. They offer a fluent paragraph, or a shrug that looks like refusal, or "I'm almost eighteen; I already know how to think."

Next move. Fluency is not a check. A Saturday test is a reading object, not a bicycle. Eighteen is not Arnett's stage and not a thinking birthday. Ask for the line a stranger could follow. Wait through the shrug. If they cannot yet hold a two-sentence other side, you are still in the 15–16 band of this move, whatever the birthday or the driving permit. Slow down: one question, one look, one line. Go ahead when they ask "how do I know?" before you do, and when the look can change the sentence. Get a human tutor if the talk is stuck in fight for weeks, or if reading the recap itself is the barrier — that is a reading need, and it deserves a reading adult, not a thinking slogan.

No shame. A wrong reason can be heard. A better question can be asked. A fact can be named. "Never correct the student" is not this book's rule. Crushing the talk is not the rule either. Correct the reason. Stay accountable to the person.

Tools, including AI

Optional helpers for you, the adult. Keep this short. The thinking hour already holds the full AI box for ages 15–18. Point back there.

The student talks to you. You may use a tool. A chatbot is never the only partner. COPPA’s under-13 line does not apply to this age. That is an account fact, not a thinking birthday, and not a licence for unsupervised chat.

After the student has tried, you may ask a tool, on your account, to explain this page *to you* from a named book page, or to diagnose a reason the student already gave. You hear the diagnosis and decide. You may ask for extra questions, then throw out any that import a live controversy, a secret, a pretend expert, or a civic-web item this book does not assign.

You may not park an unsupervised chatbot as the only partner. You may not ask the tool to write their reason, their essay, or their steelman, then paste that text as theirs. You may not invent an expert identity and treat that voice as a person. You may not grade thinking from a detector score. You may not print a certificate of thinking. You may not ask the tool to invent who started last week or what the rainfall was.

One crutch sentence, then teach: in a high-school math trial, an unguarded chatbot made practice look better and left students worse on the test with the window closed. A fluent reason from a machine is performance, not the student’s check. Ages 15–16: you hold the account; you are in the room. Ages 17–18: you co-hold; they may type in your presence; co-holding is not unsupervised. After any tool, a closed-window paragraph. The unaided reason is the student’s.

A thinking tool is not a secret friend.

What “done enough” looks like

Before you move on, you should be able to hear a why-story and ask “How do you know?” without turning dinner into a courtroom. The student should be able to take a recap, a forecast, a captain question, “the article said,” or a short-essay claim, say how they know, look at one other thing, and change the sentence if the look goes the other way.

Checklist

- You can say Ennis’s sentence in ordinary language: deciding what to believe or do, with reasons, doing justice to challenges.
- You can hear “because we wanted it more” as a why-story, not a look at the box score.
- The student can answer “How do you know we dominated?” with something other than volume.
- There has been at least one in-home try and at least one out-of-home try (walk, after practice, library).
- Ages 15–16: a spoken sentence plus one written line that names the claim and the check, when asked for the other side.
- Ages 17–18: a short written reason a stranger could follow, sometimes holding the other side in a second sentence.
- No one is treating eighteen, a driving permit, or a Saturday test as a thinking diploma.
- No one is treating 15–18 as Arnett’s 18–25.

Placement is by skill, not birthday. A “grade 11 critical thinking workbook” is a publisher’s scope, not a legal grade, and not a transcript line. If the student still lives in own-side exposition and needs the prompt “what would someone who disagrees say?”, they are still in this chapter’s 15–16 band of the move, whatever their age. If they cannot yet hold a two-sentence other side and a line a stranger could follow, stay here a week. Revisit next Tuesday on a similar surface. The title of the year’s work, if a title is needed at all, is still English, or Science, or History — not Critical Thinking I, and not AP Critical Thinking. That course does not exist.

You understand this. You know what to say tomorrow. You know what an own-side “because” sounds like when it is not yet a check. You know what a finished-looking paragraph without a named source looks like. You can do this.

Chapter 2 — Moves that scale

Critical Thinking for Emerging Adults

Michael Gannotti

2 September 2026



Figure 5: A table of small objects: a paused clock hand, a speech balloon, a box score with unreadable type, a forked path, a second book, a rainfall graph, a broken “always,” two facing chairs, a dated notebook line.

Why this matters

What do you mean, *always*?

A teammate said it. A sibling said it. A recap said it. The bus, the starting five, the closing time, the “best” on the front of the box. *Always* is a small word doing a large job. If you let it pass, you get a universal where a habit would have been enough. If you ask what it means, the claim has to come into the room as a picture you can check.

This chapter names the teachable object. Not a general faculty. Not a reprint of the 5–10 picture-bank or the 11–15 two-source week. A small set of social-cognitive moves, practiced on material the student already somewhat knows.

Five that scale from the younger books: **wait**; **what do you mean**; **how do you know**; **what else could be true**; **how could we check**.⁵⁵ Four the middle book added: **two-source** (“what’s a second place we could look?”); **graph** (“what does this graph actually show?”); **counterexample** (“always? can we think of a time it wasn’t?”); **steelman** (“what’s the strongest version of what they mean?”). Two this book adds, named out loud here, owned later: **write the reason so a stranger could follow it**; **leave this page**.

The idea unlocks a week in which you close your mouth. One good question beats five. Implicit hope that “we value thinking” will not do. Philip Abrami’s 2008 review put it plainly: improvement cannot be a matter of implicit expectation.⁵⁶ That paper mixed ages. The principle still disciplines a kitchen.⁵⁷ Name the move. Practice it. Ask one. Wait.

The struggle is worth it because late high school is fluent. Fluency hides the mash. A list of three “reasons” can still be three why-stories. A steelman that is actually a straw is still a straw. A finished-looking sentence can still have no check. The named moves make the mash audible before it hardens into a paragraph.

If you only remember one thing from this chapter: skip the wait, skip the thought. At 15–18 the shrug looks like refusal. Do not rescue it.

For the parent: understand it yourself

Here is the everyday picture.

Dinner. Someone says, “The bus is always late.” You could argue. You could list times it was on time. You could lecture about universals. Or you could ask, “What do you mean, *always*?” and wait. Two pictures of *always* will usually

⁵⁵The five moves scale from *Critical Thinking Skills for Little Thinkers* (ages 5–10). The four additions scale from *Critical Thinking for Young Minds* (ages 11–15). This chapter names them for 15–18; it does not reprint those lesson banks.

⁵⁶Philip 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): improvement “cannot be a matter of implicit expectation”; immersion weakest; explicit objectives beat implicit hope. Mixed-age. The principle disciplines a parent manual.

⁵⁷Philip C. Abrami et al., “Strategies for Teaching Students to Think Critically: A Meta-Analysis,” *Review of Educational Research* 85, no. 2 (2015): combination of dialogue, authentic problems, and mentoring $g = 0.57$ is 19 mixed-age studies, not this band; high school 16–18 $k = 71$, $g = 0.25$ on standardised tests.

appear: every single day this month, or often enough that it feels like every day. Those are different claims. Only one of them dies when you name Tuesday.

Here is the precise picture.

The five openings are requests, not a costume. “What do you mean?” is Ennis’s clarifying question, the one a parent can hear: Why? What do you mean by...? What would be an example? What would *not* be an example?⁵⁸ “How do you know?” keeps Kuhn’s two jobs from collapsing: evidence *that* it happened, versus a story about *why* it might have.⁵⁹ “What else could be true?” is Lipman’s alertness to alternatives, said without a brand.⁶⁰ “How could we check?” is the cheap look. Wait is the silence that lets any of those land.

Mary Budd Rowe named wait-time in science class: the pause after you ask, and the pause after they finish.⁶¹ Typical classrooms were under a second and a half. When the pauses lasted about three seconds, talk changed. Robert Stahl later preferred *think-time*: a distinct period of uninterrupted silence so that teacher and student can both finish processing.⁶² Stahl listed eight categories of silence, including the pause after a question, the pause after a student stops, and the pause inside a response. About three seconds is a convention, not a sacrament. Rowe is science class. Stahl is classroom instruction. They are not one paper. They are not a homeschool trial. They still scale. At 15–18 your urge to fill the silence is often stronger, because a shrug looks like refusal and a job supervisor is not a science teacher. Wait in private at a job. Look at the object if the silence is hard.

⁵⁸Robert H. Ennis, “The Nature of Critical Thinking” (2015 PDF) and the public conception: clarifying questions include Why? What do you mean by...? What would be an example? What would not be an example?

⁵⁹Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): explanation of why a claim makes sense versus evidence that the claim is true.

⁶⁰Matthew Lipman: request for reasons; criteria (“what are we going by?”); alertness to alternatives. Aims, not EEF evidence. EEF 2021 Philosophy for Children was 198 schools, 0 months on KS2 / Year 6 $\approx$ 10–11 reading and maths — not this band’s trial; if a branded hour is named later, that limit sits in resources.

⁶¹Mary Budd Rowe, “Wait-Time and Rewards as Instructional Variables, Their Influence on Language, Logic, and Fate Control” (NARST 1972; *Journal of Research in Science Teaching* 11, no. 2, 1974): science-class wait; typical pauses under about 1.5 seconds; extending to about 3–5 seconds changes discourse. Not a homeschool RCT.

⁶²Robert J. Stahl, “Using ‘Think-Time’ and ‘Wait-Time’ Skillfully in the Classroom,” ERIC Digest ED370885 (1994): think-time as uninterrupted silence; eight categories; about 3 seconds a convention. Classroom-origin. Do not mash with Rowe as one paper. Tobin 1984/1987 is a later wait-time review; not mashed into Rowe here.

The four additions are the same family, a later grain.

Two-source: leave this speaker. A recap and a box score are two speakers. Two storm pages are two speakers. Two tabs from the same site are often one speaker repeating themselves. Chapter 4 owns the fuller leave-this-page.⁶³ This week you name the question: “What’s a second place we could look?”

Graph: a picture is a claim made with ink. “What does this graph actually show?” Title, axes, units, what is missing. Chapter 5 owns Curcio’s three readings. This week you name the question so it is in the set.

Counterexample: a universal is a claim that one case can wound. “Always? Can we think of a time it wasn’t?” Upgrade to *usually* if that is what they meant. That is not relativism. That is precision. Stay on ordinary stakes: the bus, the starting five, the closing time. Live controversy does not enter as “practice for alternatives.”

Steelman: say the strongest fair version of what they mean, then answer *that*. Parent-facing slang for Kuhn’s dual-perspective. There is no trial titled Steelman.⁶⁴ There is no What Works Clearinghouse intervention by that name. Inventing a better argument they did not make, then knocking it down, is not steelman. Asking a machine to write the steelman so you can paste it is write-my-reason. Ages 15–16: two sentences, out loud if needed. Ages 17–18: that version on paper, then the check.

The written reason, named here: **I claim X because Y.**⁶⁵ **We checked by Z.** Optionally: **Someone who disagrees would say...** Dated. Stimulus named. Sources named. A stranger who was not at dinner could follow it. Chapter 6 owns the grain. Kuhn and Crowell already showed that extra essay writing without an interlocutor is not the intervention.⁶⁶ Talk first. Write. Then look. If the sentence cannot survive the check, correct the sentence.

⁶³Leave-this-page, named here, owned in Chapter 4. Two-source question: “What’s a second place we could look?” Graph question: “What does this graph actually show?” owned in Chapter 5.

⁶⁴Steelman is parent-facing slang for dual-perspective / saying the strongest fair version. No RCT titled Steelman. Not a WWC intervention. Dennett/Rapoport formulations are secondary; page-level quotations not used here.

⁶⁵Written-reason shape, named here, owned in Chapter 6: I claim X because Y. We checked by Z. A stranger could follow it. Not a five-paragraph course, not NAEP, not SAT Expression of Ideas, not CCTST, not AP Research.

⁶⁶Deanna Kuhn and Amanda Crowell, *Psychological Science* 22, no. 4 (2011): extra essay writing did not help; dual-perspective came from dialogic practice. Talk first; write; then look.

One good question beats five. If thinking time is skipped, people struggle to form interesting questions.⁶⁷ That was a process finding in a primary-age philosophy trial. The age is younger. The mechanism still warns a parent: stack five questions, get a recitation. Perform Socrates, get a performance. Ask one. Wait.

A Socratic costume is tempting at this age because the student can already talk. Talking is not the same as a named move. Five questions in a row, each sharper than the last, trains them to hunt for the answer you are withholding. One authentic question about meaning, knowledge, a second source, a graph, a counterexample, a steelman, or a written check trains them to think about the object. This book takes the second. You are sitting beside them. You are not performing a seminar.

The younger books in this house already practiced wait, meaning, how-do-you-know, what-else, and how-could-we-check on a swing, a cereal box, a park sign.⁶⁸ The middle book already practiced two-source, graph, counterexample, and steelman on a recap, a spec sheet, two storm pages, a rainfall graph at 11–15. Those objects still work if they walk through the door. They are not this week's centre. This week's centre is the same family of moves on *always*, a captain word, a store label, a walk-sized universal, a sibling claim, and one sentence a stranger could follow. Naming the family is not reprinting the bank.

Hearing a wrong reason, then asking a better question, then naming a fact if needed, is teaching. "Never correct" is not a finding. Kuhn's classroom work evaluated reasons, generated counters, and dropped weak cards. That is correction. Correct the reason. Stay accountable to the person.

Wrong answers you should be able to hear

These are illustrations, not portraits.

1. **A shrug, fast, that you fill.** Wait-time 1 was zero. The shrug often looks like refusal. It is often search. Wait.
2. **"Always means always."** Meaning has not been asked. Two pictures have not been separated. Ask what they mean before you judge.

⁶⁷Process evaluation of the Gorard, Siddiqui, and See (2015) efficacy trial noted that if thinking time was skipped, children struggled to form interesting questions. Primary age. Mechanism warning only.

⁶⁸Daniel T. Willingham, *American Educator* (Summer 2007) and NSW paper (2019): knowledge first; maxims without practice in a known domain will not implement. The moves are practiced on a recap, a box, a walk, a store, a sibling claim.

3. **Three fluent reasons, all why-stories.** “How do you know?” was heard as “give me a list.” A list is not a look.
4. **A steelman that is actually a straw.** “So you’re saying the bus *never* comes, which is ridiculous.” That is not the strongest fair version. Say it so they would nod.
5. **A finished-looking paragraph, or a chatbot paragraph, offered as the reason.** Length is not the job. A machine’s fluency is performance. Ask for the line a stranger could follow, written after the try, window closed.

Five-minute parent warm-up

Tonight, pick one small word already in the house: *always*, *dominated*, *captain*, *best*, *qualified*. Ask yourself what two pictures it might name. Then practice a slow three on a question you already ask — homework, a chore, a forecast — and do not fill the shrug. That is what you can learn this week: the five openings plus the four additions plus “write it so a stranger could follow it,” and how to close your mouth for a slow three when the shrug looks like refusal.

How to teach it this week

Session shape

Warm-up (1–2 minutes). Invisible wait drill. You will not name it to them as a drill. You will close your mouth.

Short model (2 minutes). You take *always*. Out loud: “The recap says we always start with X. What do I mean, *always*? Every match this season, or the last few that I remember? Those are different.” Stop. Do not finish their picture.

Student attempt (5–8 minutes). They take the next *always*, or *best*, or *captain*. One question. Wait.

One good question. The exact wording you can say this week:

“What do you mean, *always*?”

If the word is not *always*, keep the shape: “What do you mean, *dominated*?” “What do you mean, *captain*?” “What do you mean, *qualified*?” “What do you mean, *the article said*?”

Mixed practice (5–8 minutes). After meaning is on the table: “How do you know?” Then one of: “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?” Not all of them. One.

Exit ticket (3–10 minutes). One written sentence: claim, because, check. Dated. If they are 15–16, a spoken sentence plus one written line is enough. If they are 17–18, ask the other side onto the page.

Exact wording you can say

- “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? Say it so they would nod.”
- “Can you write that so a stranger could follow it?”
- “You may change your mind.”

Ask one. Wait twice. After “write the sentence,” that is task-completion time.

First try-it for the student

Meaning of a small word, dinner, 3–5 minutes. Food already there, or a recap on the table. “What do you mean, *always*?” Two pictures. Clarify before you judge.

How to fade help

First time: you supply two pictures of the word. Second time: you ask and wait; they supply the pictures. Third time: they catch *always* before you do. Fade the steelman from “I’ll say theirs, then you try” to “you say theirs so they would nod.” Fade the written reason from a spoken line you scribe to a line they write. Do not grab the answer. Do not finish the reason. Do not paste a machine’s steelman as theirs.

When to stop talking

When meaning is on the table, one check has been named, and the shrug has been waited through at least once. If you have stacked five questions, you have already talked too much. Stop. The next move can wait until tomorrow.

Ages 15–16

Ennis's clarifying questions are the centre. Dual perspective when asked. Steelman two sentences, out loud. Written line names the claim and the check. Parent holds any tool account. Look still often outruns meaning: they may trust the look of a page, a posting, a recap. Ask what the word means anyway. Counterexample on a walk: one case is enough. Do not expect unprompted dual-function argument. Do not expect them to treat *always* as a universal without the prompt.

Ages 17–18

Same moves, finer grain. Steelman on paper. Written reason asked more regularly. Store two-source and posted hours versus clock can enter. They may type in your presence on an account you can open. After any tool, a closed-window paragraph. They can be asked to upgrade *always* to *usually* and to name the check that would still wound *usually*. Dual focus is still not default. Myside is still live. Fluency still feels true.

Practice that actually builds learning



Figure 6: The same small objects gathered as a still-life, not a branded wheel: pause, balloon, box score, fork, second book, graph, broken always, two chairs, notebook.

Kitchen, walk, store, after practice, after a shift: the places are the practice. The named move is still the job.

Try-it: Wait drill (in-home, invisible)

Time. No extra minutes. It rides inside whatever you were already asking.

Materials. None.

Safety. Don't mock slowness. Don't rescue the shrug. At a job, wait in private.

The fun. The adult’s mouth stays shut. That is a rarer sport than it sounds.

The skill. Rowe’s wait after the question and wait after they stop; Stahl’s within-response pause. Classroom-origin. Not a Cornell-test intervention.

Ages 15–16. A slow three. If they shrug, wait again. Smaller question if needed. Still do not fill.

Ages 17–18. Same silence. The shrug may come with a fluent “I don’t know, that’s just how it is.” Wait through the fluency too.

Try-it: Meaning of a small word (in-home: dinner)

Time. 3–5 minutes.

Materials. Food already there, or a recap on the table.

Safety. Don’t interrogate chewing. One question. Then eat.

The fun. Two pictures of *dominated*, *always*, *captain*, *best*, or *qualified*.

The skill. Clarify before you judge.

Ages 15–16. Two pictures, spoken.

Ages 17–18. Two pictures, then: which one would a stranger think you meant? Write the word as you now mean it.

Kuhn’s Clarify-? move barely moved even in a sixteen-session school intervention.⁶⁹ Asking what the *other person* means is a skilled, rare move. That is why it is named. That is why one question is enough.

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

Time. 5–10 minutes.

Materials. Recap versus box score, or review versus spec sheet. A product already in the house is enough.

⁶⁹Deanna Kuhn’s Clarify-? move: asking what the other person means is skilled and rare; barely moved even in a 16-session school intervention (Kuhn and Udell 2003 line). Copy the need to name the move, not a dosage.

Safety. No humiliation of a player, a reviewer, or the student who believed the recap.

The fun. Catching the mash: a why-story, or a fluent verb, offered as a look.

The skill. How versus why. Chapter 1's ear, now as a named move in the set.

Ages 15–16. One claim, one look.

Ages 17–18. Name both speakers (recap and table; review and sheet). Write the line.

Try-it: What-else / counterexample on a walk (out-of-home)

Time. 5 minutes of a walk already happening.

Materials. Eyes, plus a universal the student just said ("the bus is always late"; "it always rains on game day"; "that window is always stuck").

Safety. Roads. Ordinary looking. Not a live controversy. Not relativism as a personality.

The fun. "Always? Can we think of a time it wasn't?"

The skill. Break a universal; upgrade to usually if that is the honest word.

Ages 15–16. One counterexample. Celebrate the case, not the dunk.

Ages 17–18. Name what would still count against *usually*. Then, if you pass a posted time, a second look: the sign versus the clock at the stop.

Try-it: How-could-we-check / two-source at the store (out-of-home)

Time. 3–8 minutes in a shop you were already in.

Materials. One package, or two labels. Optional posted hours versus the clock on the way out.

Safety. Aisle courtesy. No lecture to strangers. No shoplifting a "test." No body talk. No food sermon. No trapping the clerk.

The fun. Turning the box. The front said *best*. The side lists capacity.

The skill. Leave the front; look at the side. A second speaker is cheap. Chapter 4 will make this a fuller leave-this-page. This week you name it.

Ages 15–16. Front versus side panel.

Ages 17–18. Front, side, and — if it is there — a spec sheet or a second brand's label on the same shelf. Where do they agree?

Try-it: Steelman a sibling or a text (in-home; out-of-home cousins)

Time. 5–10 minutes.

Materials. The disputed claim. Dated notebook if you write it.

Safety. No audience of neighbours. No sideline interrogation. After practice, not during. After a shift, not during, and not in front of a supervisor.

The fun. Saying it so they would nod.

The skill. Dual-perspective, then check. Then: write that version in one sentence.

Out-of-home cousins. After practice: steelman “we always start with X” against last week's actual starting five. After a shift: steelman “we always close at nine” against the posted hours.

Ages 15–16. Two sentences, out loud. Then a look.

Ages 17–18. The steelman on paper. Then the check. Then correct the sentence if the look goes the other way.

Try-it: Write one sentence (in-home: table)

Time. 10 minutes.

Materials. Dated notebook. A look that is cheap and safe.

Safety. Not a fake diploma line. Not a performance for relatives. Not a five-paragraph night. Not timed Saturday practice.

The fun. A page a stranger could almost read.

The skill. Claim + because + check, named here so Chapter 6 can own the grain. Talk first. Write. Then look.

Ages 15–16. One line. Stimulus named.

Ages 17–18. One line plus optional “someone who disagrees would say...” Sources named.

One incorrect example to diagnose

Illustration: a sibling says the other crew always finishes first. The student “steel-mans”: “So you’re saying we’re lazy and they’re perfect.” That is a straw. The strongest fair version might be: “You’re saying that in the last few shifts you watched, the other crew got to the closing list before we did.” Then a look: the log, the posted list, Tuesday when it was the other way. A steelman that is actually a straw is the incorrect example this chapter wants you to hear. Your move: “Say theirs so they would nod. Then we’ll look.”

A second mash, if it appears: a fluent list of three reasons with no check, offered as already done. Return to one sentence plus the look.

Talk box

Exact opening question. “What do you mean, *always*?”

Not: “Give me three reasons.” Not: “What is the vocabulary word?”

Follow-ups (three to five, not stacked).

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. Can you write that so a stranger could follow it? You may change your mind.

How to 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, the window, the posted hours, or the side of the box — not at the student — if the silence is hard. After “write the sentence,” task-completion time. At a job, wait in private. Rowe is science class. Stahl is think-time. Do not mash them. Do not cite wait-time as a Cornell-test intervention.

What a stuck silence usually means. The question was stacked. They are guessing the adult’s answer. They offered a why-story where a look was asked for.

They think steelman means giving up. They think a fluent list is already a check. Wait-time 1 was zero. They think “critical” means finding fault.

Debug. Stacked questions → pick one, apologise once for the pile, wait. Guessing what you want → “what do *you* think?” and wait-2. Why-story → name it, point at the object. Steelman-as-surrender → “saying theirs fairly is not losing yours; then we look.” Fluent list → “what are we going by? Write one sentence.” Adult lectures → silence is the treatment. Session becomes a fight → stop, postpone, smaller word. Two-source becomes a rant → return to two labels, two books, two looks. Written reason becomes a five-paragraph performance → return to one sentence plus the check.

Blocked for a new move: this week, meaning of a small word, plus wait. Mixed: when to reach for counterexample versus two-source versus steelman. The object tells you. A universal → counterexample. One speaker → second place. Another person in the claim → steelman first.

For the student

You already have most of these moves. This chapter names them so you can use one on purpose.

The five: wait. Ask what they mean. Ask how they know. Ask what else could be true. Ask how you could check.

The four that join them: 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?

The two this book adds: can you write that so a stranger could follow it? What would we have to leave this page to find out?

One good question beats five. Wait after the question. Wait after you finish talking. A shrug is allowed. Filling it for you is not the job.

Tiny worked example.

“The bus is always late.”

What do you mean, *always*? Every school day this month, or often enough that it feels like every day?

How do you know? Did you see, or did someone tell you, or do you hope so you can be annoyed?

Always? Tuesday it was early.

What's a second place we could look? The posted time versus the clock at the stop.

What's the strongest version of what they mean? "Lately it has been late more days than not, and that has made me miss the connection."

Write: *I claim the bus is often late at our stop because last week it was late four of five days. We checked against the posted time and the clock. Someone who disagrees would say Tuesday it was early — and Tuesday is real.*

Try 1. Catch one small word today — *always, best, captain, dominated, qualified* — and say two pictures of it.

Try 2. After a wait you actually waited through, answer one "how do you know?", name one second place to look, say one fair version of the other side, and write one sentence that names the check.

Explain it back. What is the difference between a steelman and a straw? Use a sibling claim, a teammate's *always*, or a review that said *best*. Do not use a slogan.

Challenge. On a walk, wound one universal with one case, then upgrade the word if you need to. Then write the new sentence.

You are allowed to wait. You can say the other side fairly without giving up yours. You can change your mind when you look. A stranger should be able to follow the sentence.

If it isn't clicking

Diagnostic 1. You ask five things at once, or you fill every shrug, and they guess what you want.

Next move. One question. A slow three. Look at the object. If the shrug holds, smaller question: "what do you mean by the first word?" Still wait. The treatment for your own lecture is silence, not a better lecture.

Diagnostic 2. They offer why-stories, or a steelman that is a straw, or they think steelman means giving up.

Next move. Name the mash once. “That’s a why-story; I need how you know.” Or: “Say it so they would nod.” Model one steelman, then they try. Then look. Looking is what keeps steelman from being mere politeness.

Diagnostic 3. The written sentence is a fluent paragraph with no named source, or they want a tool to finish it, or they treat extra essays as the work.

Next move. Return to one sentence: claim, because, check. Talk first. They write. Then look. Extra essay writing without an interlocutor is not the intervention. A machine’s paragraph is not theirs. If they cannot yet write the line, scribe what they said, then ask them to correct it after the look. Slow down to meaning-plus-wait if the rest is noise. Go ahead to Chapter 3 when they can ask what a word means and how they know, with one wait, on a known object. Get a human tutor if reading the recap or the label is the barrier, or if the table is a fight for weeks — that is not a moves problem only.

No shame. Correct the reason. Do not crush the talk. Do not skip the wait because they can drive.

Tools, including AI

Short. The thinking hour holds the full box. Point back.

After they have tried, you may ask a tool, on your account, to explain this page to you, or to diagnose a reason they already gave, or to offer extra questions you will vet. SCRIPT after the try: a short sequence for *you* to say, or a labelled sequence they may read after the attempt — not a paragraph for them to copy as their reason, their essay, or their steelman.

You may not ask the tool to write the steelman or the sentence and paste it as theirs. You may not invent “you are a sports-fairness professor.” You may not treat turning 16, 17, or 18 as a private-channel permission slip.⁷⁰ Parent in the room. 15–16: you hold the account. 17–18: you co-hold; they may type in your presence. After any tool, a closed-window paragraph.

One crutch sentence: a tool that finishes the reason can make practice look better and leave them worse when the window is closed. That finding is a high-school

⁷⁰College Board 2026 AP Exam Terms, Section 4: no part of test answers or submissions may be generated by AI tools. Applies to the student’s own submissions at 17–18. Not this book’s thinking statute.

math trial, not a thinking coefficient.⁷¹ The mechanism still warns this hour.

A thinking tool is not a secret friend. Agents are not chatbots. None of them is this week's partner.

What “done enough” looks like

You can ask one opening — usually “What do you mean, *always*?” — and wait through a shrug that looks like refusal. The student can answer one “how do you know?” after a wait, name one second place to look, say one fair version of the other side, and write one sentence that names the check.

Checklist

- The five openings are in your mouth, not on a poster you never use.
- Two-source, graph, counterexample, and steelman are named, even if later chapters own their grain.
- The written reason is named: claim, because, check; a stranger could follow it.
- Rowe is not mashed with Stahl. Wait is science-class origin plus classroom think-time, used as silence, not as a test.
- At least one in-home try (dinner meaning, wait, written sentence, steelman) and at least one out-of-home try (walk counterexample, store two-source, after-practice steelman).
- Ages 15–16: clarifying question plus prompted dual focus plus one written line.
- Ages 17–18: steelman on paper plus a sentence that survives a look.
- No reprint of a younger lesson bank as if it were new. Same family of moves; this week's objects are *always*, a recap, a box, a walk, a store, a sibling claim, a notebook line.
- No live controversy smuggled in as “practice for alternatives.”
- No Socrates costume. One good question.

Placement by skill, not birthday. If they still need you to supply both pictures of *always*, stay with meaning. If they cannot yet say theirs and then theirs-the-other-side, stay with steelman out loud. Revisit next Tuesday on a similar small word.

⁷¹Bastani et al. (2025, *PNAS*): Turkish high-school math RCT; unguarded GPT +48% on practice, then –17% versus never-AI on a closed-book exam. This age's math trial; one crutch sentence, not a CT coefficient.

The year's title is still English, or Science, or History.

You know what to say tomorrow. You know how to close your mouth for a slow three. They know what to try today.

Chapter 3 — Something to think about

Critical Thinking for Emerging Adults
Michael Gannotti
2 September 2026



Figure 7: A still-life: a recap paragraph as an object, a kitchen gadget, a puddle seen from above, a homework graph face-down, a short essay face-down beside a named second page.

Why this matters

How do you know it happened?

Then, separately, later, after the first answer has had a chance to exist:

Why might it have happened?

Those are two questions. Late high school mashes them. A fluent “because we wanted it more” sounds like knowledge. A finished-looking paragraph about a storm sounds like a look. A maxim — *consider both sides, demand evidence* — sounds like thinking. Without something on the table the student already somewhat knows, the maxim will not implement.

This chapter owns the *something*. A text. A graph. A walk. An essay claim. Domains they already somewhat know. Not a science year. Not a museum franchise. Not Saturday-test prep. Daniel Willingham's constraint is the load-bearing wall: you can teach students maxims about how they ought to think, but without background knowledge and practice they probably will not be able to implement the advice they memorize.⁷² Thought processes are intertwined with what is being thought about.

The idea unlocks a week in which you put an object down before you ask a question. If there is nothing to think about, there is no thinking hour. If the object is a live fight, you have left this book. If the object is a recap they watched, a gadget on the counter, a puddle from a walk you were taking anyway, a homework graph, or a paragraph they wrote, you have a week.

The struggle is worth it because a seventeen-year-old can talk for ten minutes about a claim they cannot yet *know*. Talk without an object is activity. An object without a question is a worksheet. The hour needs both. Deanna Kuhn's two questions, kept apart, are how you stop the mash: first, how do you know it happened; then, why might it have happened. Keep the answers from collapsing.

If you only remember one thing from this chapter: knowledge first. Teach the bit you need. Then ask how they know. Then, separately, why it might be.

For the parent: understand it yourself

Here is the everyday picture.

A recap paragraph sits on the table. You ask, "What do you think?" They tell you a story about momentum, wanting, the crowd. The story may be interesting. It has not yet answered whether the domination happened. Put the paragraph down as an *object*. Ask: how do you know it happened? They point at a verb, a number, a named speaker, or they admit they hope. Then, later: why might it have happened? Now the why-story is allowed, labelled as a why-story. Two jobs. Two times.

Here is the precise picture.

⁷²Daniel T. Willingham, "Critical Thinking: Why Is It So Hard to Teach?," *American Educator* (Summer 2007): not a bicycle; even 3-year-olds / even trained scientists; maxims without background knowledge and practice will not implement; 19 percent / 35 percent analog is a word-problem study of surface capture, not a 15–18 finding.

Willingham, 2007 and 2019: critical thinking is not a set of skills that can be deployed at any time, in any context. Even three-year-olds can engage in it in a known domain. Even trained scientists can fail outside one. Generic programs have had limited success.⁷³ Transfer, when it is tested, is absent or modest and quick to fade. Chess, music, Mozart: none succeeded as hoped as engines of general thinking. This book does not mash chess-training as high-school critical thinking. The 19 percent / 35 percent analog — a band-marching word problem that was mathematically the same as a garden problem solved minutes earlier — is a word-problem study of surface capture, not a 15–18 finding. Cite it as the constraint that still binds a fluent sixteen-year-old. They will notice the surface (the recap’s verb, the essay’s topic sentence, the gadget’s look) before they notice the deep job (did it happen; what would show it). A hint helps some people. Most still need the object and the question named.

Kuhn, 2001: in supporting a claim, young children have difficulty differentiating explanation of why a claim makes sense from evidence that the claim is true.⁷⁴ The distinction progresses. Substantial variation remains among adults. Kuhn and Pearsall: coordination of theory and evidence may not develop fully even by adulthood.⁷⁵ There is a long middle. It is unfinished at 18. This chapter does not turn that finding into a science book. The sports result, the storm total, the gadget on the counter, the puddle, the essay claim — those are enough. Fair-test kitchen work lives mainly in Chapter 7, labelled scientific reasoning.⁷⁶ Two-source lives mainly in Chapter 4. Graphs live mainly in Chapter 5. The written reason lives mainly in Chapter 6. This chapter owns the stimulus and the knowledge constraint.

A few borrowed manners, not borrowed promises. Robin Alexander’s dialogic

⁷³Daniel T. Willingham, “How to Teach Critical Thinking” (NSW Department of Education occasional paper, 2019): content knowledge crucial; generic programs limited success; transfer absent or modest and quick to fade; chess/music/Mozart none succeeded as hoped; do not mash chess as high-school CT; four-step plan is for school systems: name CT in each domain, name content, sequence, revisit.

⁷⁴Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): explanation of why a claim makes sense versus evidence that the claim is true; substantial adult variation.

⁷⁵Deanna Kuhn and Susan Pearsall, “Developmental Origins of Scientific Thinking,” *Journal of Cognition and Development* 1 (2000): coordination may not develop fully even by adulthood; long middle, unfinished at 18. This chapter does not become a science book because a scientific-thinking paper was opened.

⁷⁶Chen and Klahr (1999) and Schwichow et al. (2016, $g = 0.61$) are scientific-reasoning evidence for a one-change check. They belong as a pointer to Chapter 7, labelled scientific reasoning, not generic CT, not this chapter’s science year.

teaching and Neil Mercer's exploratory talk are school programmes below this band. Steal ground rules: we listen; we give reasons; we can change our minds.⁷⁷ Accountable Talk's third accountability is the one parent slogans drop: you are accountable to what is so, not only to taking turns.⁷⁸ Mercer's work was ages 9–10 classrooms. Portable manners. Not a critical-thinking inventory, and not a Raven-gain promise for a seventeen-year-old.

Friel, Curcio, and Bright: "read beyond the data" requires prior knowledge related to the graph.⁷⁹ That is Willingham inside a maths paper. A rainfall graph without any sense of what rain is will not carry a beyond-the-data question. Point to Chapter 5 for the three readings. This week, if a graph is the object, start with what it is about.

SAT and ACT Information-and-Ideas / Integration of Knowledge and Ideas items are reading objects.⁸⁰ They describe a kind of question a later test may ask. They are not this chapter. They are not a critical-thinking test. Notice the type if it walks through the door as homework. Do not build a prep course.

"Just wonder" is not enough. Wonder without knowledge is a shrug with better posture. Willingham is explicit: without knowledge of the issue, the student cannot think about it from multiple perspectives. A museum can be a thinking hour if it is one object, one label, one question. A museum as a franchise, a scavenger hunt, or a day of plaques is a tired walk. The same rule governs a library hour: two books on one animal or one storm is something to think about. Ten books from a display you did not choose is a pile.

The 19/35 analog is here as a warning about surface, not as a quiz. A student who just reasoned well about Saturday's recap may fail to notice that a short essay about a shop is the same job: a claim, a because, a look. You will have to

⁷⁷Neil Mercer, Rupert Wegerif, and Lyn Dawes (1999) and related exploratory-talk work: ages 9–10 classroom ground rules — we listen, we give reasons, we can change our minds — portable manners, not a CT inventory, not a Raven-gain promise for a 17-year-old. Robin Alexander's dialogic teaching: school programme below this band; steal manners, not attainment claims.

⁷⁸Accountable Talk (Resnick / Michaels / O'Connor line): third accountability is to knowledge — to what is so — not only to taking turns.

⁷⁹Susan N. Friel, Frances R. Curcio, and George W. Bright, "Making Sense of Graphs," *Journal for Research in Mathematics Education* 32, no. 2 (2001): read beyond the data requires prior knowledge related to the graph. Pointer to Chapter 5.

⁸⁰SAT Student Guide / ACT Reading: Information-and-Ideas and Integration of Knowledge and Ideas are literacy items, not critical-thinking tests. Pointer, not a prep course.

cue the similarity, more than once.⁸¹ Near transfer to another recap, another gadget, another paragraph is the honest hope. Far transfer to an unseen domain is an open question. Willingham predicts it will not happen without that later domain's knowledge. This book teaches the moves on known stakes. It does not promise a bicycle.

Picture books are no longer the centre. A novel, a homework sheet, a recipe, a box score, a friend's texted claim, a short essay, and a job posting are. The younger books used a swing, a cereal box, a park sign, then a recap at 11–15.⁸² Same family of *something*. Different grain. Not a reprint.

Who was in a position to know is a source question, not a volume-of-voice question. Children already weigh speakers. Brown and Gummerum: fifteen sits in the younger cell of a selective-trust study; 17–18 sit in the older cell; an accuracy prime did not move scores; look still often outruns meaning.⁸³ Teach “who saw it?” on a game memory, a shift memory, a gadget someone used. Do not write that fifteen-year-olds are credulous blank slates. Do not write that they are miniature fact-checkers of the live civic web because they are a certain study's age.

Wrong answers you should be able to hear

These are illustrations, not portraits.

1. **A why-story offered as how they know.** “It happened because we wanted it more.” How and why collapsed. Separate the questions in time.
2. **A maxim with no object.** “We should consider both sides.” Both sides of *what*? Put the recap, the gadget, the puddle, or the paragraph down.
3. **A recitation in disguise.** “What is evidence?” They search for the word you want. Ask how they know *this* happened.

⁸¹Gick and Holyoak (1980): noticing is the bottleneck in analogical transfer. Page-level percentages from that paper were not independently verified for this book and are not cited as numbers.

⁸²*Critical Thinking Skills for Little Thinkers* and *Critical Thinking for Young Minds*: same family of *something* (swing, cereal box, park sign; then recap, spec sheet, storm pages). Not reprinted. This chapter's objects are a text, a graph as stimulus, a walk, an essay claim.

⁸³Paul L. Harris and related selective-trust work: children already weigh speakers. Sarah Brown and Michaela Gummerum (2025): younger adolescents 11–16 (fifteen in that cell) versus older 16–20 (17–18 in that cell); accuracy prime did not move scores; look still often outruns meaning. Brown stimuli included science/health pages as research objects, not this book's teaching objects; translate to a game memory, a shift memory, a gadget.

4. **Not enough knowledge of the object to think.** They do not know what the gadget is for, what the graph is about, or which storm the paragraph names. Teach the bit. Then ask.
5. **A finished-looking essay, so they think the job is done.** The *something* is now a sentence that sounds complete. It still needs a named page.

Five-minute parent warm-up

Take one object already in the house. A recap paragraph. A kitchen tool. A home-work graph face-down. A paragraph they wrote. Before you ask anything, name to yourself what a person would need to know to think about it. Then ask, silently, how you know it happened. Then, separately, why it might have. Notice whether your two answers are the same sentence. If they are, you have the mash this week is for. That is what you can learn this week: 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,” including when the thing is a finished-looking paragraph.

How to teach it this week

Session shape

Warm-up (2 minutes). Put the object down. Do not ask yet. Name what it is: “This is the recap of Saturday. This is the can-opener. This is the paragraph you wrote about the storm.”

Short model (2–3 minutes). You take the first question only. “How do I know it happened? I can point at this sentence, or I can admit I hope, or I can say I was there.” Stop. Do not smuggle in *why*.

Student attempt (5–8 minutes). They answer how they know. You wait. If they offer why, say: “Hold that. That’s the second question. First: how do you know it happened?”

One good question, then the second one later:

“How do you know it happened?”

Then, after that answer exists, separately:

“Why might it have happened?”

Mixed practice (5 minutes). A smaller object: one line of the essay, or the gadget's one job, or one puddle. Same two questions, kept apart.

Exit ticket (3–8 minutes). Write the *how* without smuggling in the *why*. Dated. Stimulus named. If they are 17–18, a second line may hold the why, labelled as why.

Exact wording you can say

- “How do you know it happened?”
- “What did you see? What were you told? What do you hope? Can those be different?”
- “Hold the why. That’s next.”
- “Why might it have happened?”
- “What’s a second place we could look?”
- “Can you write the *how* without smuggling in the *why*?”
- “You may change your mind about whether it happened. That is a different change from a new why-story.”

Ask the first. Wait. Hear. Then the second. Wait. Look at the object, not at the student, if the silence is hard.

First try-it for the student

Two texts, two questions, table, 8–15 minutes. One pictured or reported event: a recap paragraph, a short article about a storm or a date, a homework passage, a short-essay claim. Skip live-controversy pages. Opening: “How do you know it happened?” Then, later: “Why might it have happened?”

How to fade help

First time: you separate the questions out loud, and you catch the mash. Second time: they catch themselves smuggling why into how. Third time: they write the how first, then the why, on purpose. Teach the bit of knowledge they need — what the gadget is for, which town the forecast names, what “possession” means — just in time, at the moment the looking needs it. Do not front-load a lecture. Do not grab the answer. Do not finish the how for them.

When to stop talking

When both questions have been asked, in order, and the object has been looked at once. If you have explained the whole domain, you have left the hour. Stop. The bit they needed was smaller.

Ages 15–16

Knowledge in a known domain is enough. Two questions, spoken, kept apart. They may still mash how and why; catching the mash is the win. Who was in a position to know: one speaker named. Walk noticing: one thing, one “how do you know it’s a...?” Look still often outruns meaning; ask anyway. Parent holds any tool account. Do not expect unaided far transfer from this recap to an unseen kind of claim. Near is the honest hope: another recap, another paragraph, another gadget.

Ages 17–18

Same two questions. The *something* may be a short essay they wrote, a job-shift memory, two related texts. Write the how without smuggling the why. Name who was in a position to know, and who was not. College-adjacent reading of a claim-plus-graph is literacy familiarity, not a faculty. Parent co-holds tools; closed-window paragraph after any tool. They can be asked what knowledge they still lack before a why-story is worth much. Dual focus is still the work. Surface capture still happens. Willingham does not expire at 18.

Practice that actually builds learning



Figure 8: A kitchen gadget on a table beside a short spec card, no brand marks, no readable interface.

The places are the practice. The object is the job. Kitchen, walk, library, after a game, after a shift.

Try-it: Two texts, two questions (in-home: table)

Time. 8–15 minutes.

Materials. One pictured or reported event: a recap paragraph, a short article about a storm or a date, a homework passage, a short-essay claim. Optional second named page for later. Dated notebook.

Safety. Skip live-controversy pages. Ordinary reading.

The fun. Being a detective of *that* versus *why*. The first question is a look. The second is a story, labelled.

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

Ages 15–16. Two questions, spoken. Catch the mash once.

Ages 17–18. Write the how. Then, separately, write the why. Sources named if a second page is opened.

Illustration, not a reported family: a paragraph says the storm dumped two inches before dawn. How do you know it happened? The paragraph’s number; a rainfall table; the puddle by the step. Why might it have happened? A front moved through — a why-story, allowed second. If they say “it happened because a front moved through,” they have mashed. Separate.

Try-it: Object you can hold (in-home: kitchen)

Time. 5–10 minutes.

Materials. One kitchen gadget, a product already bought, a spec sheet if it came in the box.

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

The fun. “What is it for?”

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

Ages 15–16. What is it for? How do you know? One check: the spec card, the way it fits the jar, the job it actually did.

Ages 17–18. What is it for? How do you know? Why might the designer have chosen this shape? Keep *why the shape* from pretending to be *whether it opens the jar*.

A maxim about “evaluating products” will not implement if they do not know what the tool does. Teach the bit. Then ask.

Try-it: Walk — what do you notice? (out-of-home)

Time. 5–20 minutes of a walk already happening.

Materials. Eyes. Optional notebook mark. Optional forecast, then the sky.

Safety. Roads, water, unknown plants, other people's dogs. Ordinary looking. Not Forest School. Not a climate-policy seminar. No lecture to strangers.

The fun. Stopping.

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

Ages 15–16. One stop. One name. How do you know?

Ages 17–18. One stop. How do you know? Then, separately, why might that puddle still be here? Forecast versus sky if you have a forecast. Write one line later if the walk was wet.

A museum cousin, if you are already there: one object, one label, one question. Not a franchise. Ten to twenty minutes at *one* thing. The label is a claim. How do you know what it is? The second plaque, if there is one, is a later chapter's two-source. This week, knowledge of *this* object first.

Library cousin, if you are already there: one short article or one page the student chose, then the two questions in order. Parent still picks the prompt. If the display is a live controversy, walk to a different bay. The hour is research, not storytime, but it is still *this* page, *this* animal, *this* storm — not a college paper.

Homework-graph cousin: the sheet already assigned, face-down for a minute so the *something* comes first. What is this about? Then how do you know the number the caption claims? Then, separately, why might that number be what it is? Do not do the homework for them. One Curcio-level question they can actually answer is enough; Chapter 5 owns the rest.

Try-it: Who was in a position to know (in-home; out-of-home cousins)

Time. 3–8 minutes.

Materials. A disputed object, a disputed game memory, or a job-shift memory.

Safety. No blame ritual. No public quiz in front of a supervisor. After a shift or a game, not during.

The fun. Being the one who saw.

The skill. Source, not volume of voice. Harris-type weighing of speakers, on ordinary stakes. Brown and Gummerum: 15 in the younger cell, 17–18 in the older; look still often outruns meaning.

Ages 15–16. Who saw it? Who heard about it? Who hopes?

Ages 17–18. Who saw it? Who was in a position to know the hours, the start list, the actual closing? Volume is not position.

Out-of-home cousins: after practice, who actually watched the last ten minutes; after a shift, who was at the door when the clock said nine.

Try-it: A claim in a short essay (in-home: table)

Time. 8–15 minutes.

Materials. One paragraph. The named page it cites, if there is one, opened.

Safety. Not a humiliation of the writer. The object is the sentence.

The fun. The *something* is now a sentence that sounds finished.

The skill. It still needs a named page. How do you know the claim happened (or is so)? Then, separately, why might the writer have thought that?

Ages 15–16. Circle the claim. How do you know? Open the page.

Ages 17–18. Write the how without smuggling the writer's why. Then label the why as why. Correct the sentence if the named page does not carry the claim.

One incorrect example to diagnose

Illustration: a homework passage about a date. You ask how they know it happened. They say, "Because it makes sense that it would have, given the weather." That is a why-story in the how slot. Or: they do not know which storm, which town, which night, and they answer anyway. That is a maxim without knowledge. Or: the essay sounds finished, so they think the job is done. Your move: put the object down. Teach the bit (which night). Ask how they know. Hold the why. Then ask why. Then, if needed, name the fact.

Talk box

Exact opening question. "How do you know it happened?"

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

Not: “What is evidence?” Not: “What is the vocabulary word?”

Follow-ups (three to five).

1. What did you see? What were you told? What do you hope? Can those be different?
2. Hold the why — that’s next. (If they mashed.)
3. Why might it have happened? (Only after the how exists.)
4. What’s a second place we could look?
5. Can you write the *how* without smuggling in the *why*? You may change your mind about whether it happened.

How to wait. After the first question, a slow three. After they stop, wait again. Then the second question, a new wait. Look at the object — the paragraph, the gadget, the puddle, the face-down graph, the essay beside the named page — not at the student, if the silence is hard. After “write the how,” task-completion time. At a job, wait in private. Stahl is think-time, classroom-origin. Rowe is science class.⁸⁴

What a stuck silence usually means. They collapsed how and why. They don’t know enough about the object to think. The question was recitation in disguise. The essay sounds finished so they think the job is done. Wait-time 1 was zero. They are guessing what you want. They think “critical” means finding fault with the writer.

Debug. Mash → “hold the why; first, how do you know it happened?” Not enough knowledge → teach the bit, then ask again. Recitation → point at *this* object. Finished essay → “the sentence sounds done; the check is still open.” Adult lectures on the whole domain → stop; the bit was smaller.

Blocked for a new move: this week, two questions kept apart, on an object they somewhat know. Mixed: when the object is a graph, add “what does this actually show?” (Chapter 5). When it is two pages, add “what’s a second place?” (Chapter 4). When the how is ready, write it (Chapter 6).

⁸⁴Mary Budd Rowe (1972/1974): science-class wait. Robert J. Stahl, ERIC Digest ED370885 (1994): think-time, classroom-origin.

For the student

Thinking needs something to think about. A maxim without an object is a poster. This chapter puts an object down, then asks two questions, in order.

First: How do you know it happened?

Second, later: Why might it have happened?

Those are not the same question. A why-story can be interesting. It is not yet a look at whether it happened.

Tiny worked example.

Object: a recap paragraph. “Home side dominated after the break.”

How do you know it happened? Point at a number, a table, a thing you saw, or admit you hope. Wanting it is not a look.

Why might it have happened? Now you may say stamina, substitutions, the other side tiring. Label it as why.

If you wrote “it happened because they wanted it more,” you mashed. Separate the sentences.

Try 1. Pick one object: a paragraph, a gadget, a puddle, a sentence you wrote. Answer how you know. Do not answer why yet.

Try 2. After the how exists, answer why it might be. Then write the how so a stranger could follow it, without smuggling in the why.

Explain it back. What is the difference between how you know it happened and why it might have? Use the recap, the gadget, or your own paragraph. Do not use a memorized definition.

Challenge. Find a finished-looking sentence — yours or a sample about a match, a shop, or a storm — and write two labelled lines: HOW and WHY. If you cannot fill HOW, you do not yet have knowledge of the object. Find the bit. Then try again.

You are allowed to wait. You are allowed to say “I don’t know yet; I need to know what this is for.” That is thinking. That is not failure. You can change your mind about whether it happened when you look. You can keep a why-story and still drop a false how.

If it isn't clicking

Diagnostic 1. They collapse how and why, every time, especially when the essay sounds finished.

Next move. Separate the questions in time. Write HOW at the top of the page and WHY underneath, and do not let the second line be written until the first has a look. If the reason is still mashed, name it: “that’s a why-story in the how slot.” Correct the sentence. Put the named page or the box score down before you ask again.

Diagnostic 2. They don’t know enough about the object, so they recite, or they freeze, or they moralise.

Next move. Teach the bit. What the gadget is for. Which town. Which night. What “possession” means. Then ask how they know. A museum hour that tries to cover the whole floor is not a thinking hour; pick one object. A graph without knowing what rain is cannot carry “beyond.” Slow down. Knowledge first.

Diagnostic 3. You asked “what is evidence?” or you front-loaded a lecture, and they are guessing what you want.

Next move. Point at *this* recap, *this* gadget, *this* puddle. “How do you know it happened?” Wait. If the table is a fight, postpone. Pick a smaller object. Go ahead to Chapter 4 when they can keep how and why apart on a known object and name a second place. Get a human tutor if reading the text is the barrier, or if they cannot yet name everyday objects they handle — that is knowledge or reading, and it deserves that adult, not a thinking slogan.

No shame. A maxim died because there was nothing on the table. Put something down. Teach the bit. Ask. Wait. Look.

Tools, including AI

Short. Point back to the thinking hour.

A tool does not know what happened on Saturday unless you feed it a fact. Asking it to invent who started, whether the shop was closed, or what the rainfall was is banned. After they have tried on a *named* object, you may ask a tool to explain a named book page to you, or to diagnose a how-answer they already gave. You vet

extra questions. Throw out any that import a live controversy, a secret, a pretend expert, or a civic-web item.

You may not let the tool become the object. The recap, the gadget, the puddle, the paragraph — those are the something. A chatbot is never the only partner. 15–16: you hold the account; you are in the room. 17–18: you co-hold; closed-window paragraph after any tool. The unaided how is the student’s.

One crutch sentence: a tool that finishes the reason can make practice look better and leave them worse when the window is closed.⁸⁵ Knowledge first still applies. The machine does not supply the domain they lack.

A thinking tool is not a secret friend.

What “done enough” looks like

You can put an object down before you ask. You can keep “how do you know it happened?” from collapsing into “why might it have happened,” including when the object is a finished-looking paragraph. The student can look at one text or one object, answer how they know, then, separately, why it might be.

Checklist

- Something is on the table: a text, a graph (as object, not yet a full graph lesson), a walk-sized noticing, an essay claim.
- The two questions are asked in order, with a wait between them.
- Knowledge needed for *this* object is taught just in time, not as a lecture.
- At least one in-home try (two texts, gadget, essay claim, who-saw-it) and at least one out-of-home try (walk, after practice, after a shift, museum-as-one-object).
- Ages 15–16: spoken how, then spoken why; mash caught at least once.
- Ages 17–18: written how without smuggling why; who was in a position to know, named.
- This is not a science book. Fair tests wait for Chapter 7. Two-source waits for Chapter 4’s grain. Graphs wait for Chapter 5’s three readings. The stranger-readable reason waits for Chapter 6’s grain.
- SAT/ACT are not this chapter.

⁸⁵Bastani et al. (2025, *PNAS*): high-school math trial; unguarded chatbot as crutch. One sentence; the machine does not supply missing domain knowledge.

- No live controversy as the object.

Placement by skill, not birthday. If they cannot yet think because they do not know what the object is, stay with knowledge of *this* thing. If they still mash how and why, stay with two questions in order. Revisit next Tuesday on a similar surface. The year's title is still English, or Science, or History.

You know how a maxim dies without a thing on the table. They know what to try today: one object, two questions, kept apart.

Chapter 4 — Two sources / leave this page

Critical Thinking for Emerging Adults
Michael Gannotti
2 September 2026



Figure 9: Two books face-up on a table, a recap page and a box score with unreadable type, a window, a generic posted-hours sign, and a clock. No shop name, no faces.

Why this matters

What's a second place we could look?

The recap is still fluent. The posting still looks official. The review still says *best*. The essay still sounds finished. One page can do a lot of work if you stay on it. The move this week is to stop investing attention in the page in front of you until you have looked somewhere else.

A check at seven is often a look: ice, puddle, picture. A check at thirteen can be a second, independent source. At 15–18 a check can be that *and* a fuller leave-this-page. Two pages. Two labels. Two people. Two looks. A posted notice versus a clock. A handbook versus what they were told. An essay-claim versus the named

page.

This is corroboration, scaled. Historians compare across sources. Fact-checkers leave an unfamiliar page. This book does not reprint those civic weeks. It does not assign those items. High-school students who stay on a finished-looking page miss who is behind it.⁸⁶ That is why we practice leaving a recap, a spec sheet, a storm page, an essay-claim, and posted hours *now*. The translation onto ordinary stakes is a design hypothesis, not a trial.⁸⁷ 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.⁸⁸ Willingham predicts it will not happen without the later domain's knowledge.

The idea unlocks a week in which two speakers are cheaper than a sermon. You do not have to pick a team. You have to name where they agree, where they do not, and what kind of speech each one is.

The struggle is worth it because fluency feels like a check. A recap that says *dominated* can be repeated until it feels true. A posting that lists hours can be trusted because it looks like a posting. A review can be trusted because it is long. Leave this page. Look at one other thing.

If you only remember one thing from this chapter: a fluent sentence is not a check. What's a second place we could look?

For the parent: understand it yourself

Here is the everyday picture.

The recap says they dominated. You could argue with the verb. You could repeat the verb as the thing to knock down. Repeating the rumor is the rumor. Or you

⁸⁶Joel Breakstone, Mark Smith, Sam Wineburg, Amie Rapaport, Jill Carle, Marshall Garland, and Anna Saavedra, "Students' Civic Online Reasoning: A National Portrait," *Educational Researcher* 50, no. 8 (2021): 3,446 high-school students; 96 percent never uncovered a climate site's fossil-fuel ties. This is this age's research population and *why the habit is taught*. **Items are not assigned.** Being the Breakstone age is not a licence to reprint the trial.

⁸⁷Translation of COR's three questions (who's behind this; what's the evidence; what do other sources say) onto recap / spec sheet / storm page / essay-claim / posted hours is a design hypothesis, not a 15–18 RCT of storm-pages or hours-versus-clock.

⁸⁸Daniel T. Willingham, *American Educator* (Summer 2007) and NSW paper (2019): far transfer to civic web evaluation is an open question; without the later domain's knowledge, maxims will not implement. Near transfer to another recap is the honest hope.

could leave the recap for the box score. Two speakers. Where do they agree? Where don't they? You do not have to pick a team.

Here is the precise picture.

Ennis already named the adult habits: use credible sources and usually mention them; agreement among sources; expertise; conflict of interest; reputation; position to observe.⁸⁹ Hearsay is weaker than the observer's report. Corroboration is on the list. You do not need the long outline as a syllabus. You need two places that are not the same speaker repeating themselves.

Wineburg's named adult practice is corroboration: compare across sources.⁹⁰ Lateral reading is the fact-checker habit of leaving the page. *Critical Thinking for Life* already spent those civic weeks. One pointer, then teach at 15–18 on ordinary stakes. Being the age of a high-school evaluation study is not a licence to reprint the items.⁹¹ This book needs two pages about the same storm, a recap versus a box score, posted hours versus a clock, two library books, a review versus a spec sheet, an essay-claim versus the named page. Use a *real* recap that really says “dominated,” a *real* posting that really lists hours. Invented cartoons teach suspicion as a personality. Ordinary objects teach the look.

Three questions, translated onto the safe object — who wrote this; what would show the claim; what does the other page (or the table, or the sky, or the clock) say. On a recap: who wrote “dominated”; what would show it; the box score. On posted hours: who posted the sign; what would show the shop is open; the clock. On an essay-claim: who wrote the paragraph; what would show the date or the total; the named page, opened. That translation is how this week is built. It is not a government-course lesson bank.

History-class trials at the right age licence the *shape*, labelled as history class, not

⁸⁹Robert H. Ennis, “The Nature of Critical Thinking” (2015 PDF) and the 2000 long conception: use credible sources; agreement among sources; expertise; conflict of interest; reputation; position to observe; hearsay weaker than the observer's report; corroboration. Not a grades 10–12 syllabus.

⁹⁰Sam Wineburg, corroboration as a historian heuristic; Wineburg and Sarah McGrew (2019), lateral reading as fact-checker practice of leaving an unfamiliar page. *Critical Thinking for Life* Chapter 6 already spent the civic weeks. Pointer, not a reprint.

⁹¹Sam Wineburg, Joel Breakstone, Sarah McGrew, Mark Smith, and Teresa Ortega (2022, *Journal of Educational Psychology*): six ~50-minute Civic Online Reasoning lessons in a high-school government course (treatment n = 271, matched control n = 228); experimental classrooms grew on credibility tasks. Stanford GSE news “doubled / half the points” is journalism. Why the habit is taught, not this book's lesson bank.

a generic gym. Nokes, Dole, and Hacker: ages 16–17, multiple texts beat a textbook on sourcing and corroboration; contextualization did not move.⁹² Reisman: eleventh-graders, document-based historical thinking in school.⁹³ De La Paz and Felton: grade 11, same documents, instructed essays longer and more historically accurate.⁹⁴ A parent cannot run those courses. A parent can put two books, two pages, a recap and a table, hours and a clock, on the table. Copy the shape: more than one document; name the speakers; say where they agree.

Look still often outruns meaning. Coiro’s younger students used a copyright symbol as a credibility cue.⁹⁵ Brown and Gummerum: fifteen in the younger cell, 17–18 in the older; an accuracy prime did not move scores. Teach “ask what they mean,” “leave this page,” and “look at the numbers, not only the look.” They are not credulous blank slates. They are not miniature fact-checkers of the live civic web.

Two library books are a two-source page, not a college paper. NCES (2016) found the library among common sources of curriculum and books for homeschool families, including at 9th–12th.⁹⁶ A public library’s mission may include exploratory conversation. That is mission language, not a trial. Go on purpose. Parent still picks the prompt. If the display is a live controversy, walk to a different bay.

Posted hours versus a clock is ordinary looking, after a shift or on an errand, not during, no supervisor as audience, no undercover audit, no gotcha against a shop.

⁹²Jeffrey D. Nokes, Janice A. Dole, and Douglas J. Hacker, *Journal of Educational Psychology* 99, no. 3 (2007), abstract: 128 male and 118 female, ages 16 and 17; eight classrooms; 3 weeks; multiple texts beat textbook on content and on sourcing/corroboration; Nokes 2010 restatement: contextualization did not move. Full PDF cells not independently verified.

⁹³Avishag Reisman, “Reading Like a Historian” quasi-experiment (2012): 236 eleventh-graders; six months; significant main effects on historical thinking, transfer of those strategies to contemporary issues, factual knowledge, and reading comprehension (Stanford extract; cell means not independently verified). History class, labelled, not generic CT.

⁹⁴Susan De La Paz and Mark K. Felton (2010): grade 11, $n = 81$ instruction versus 79 control, same documents; instructed essays longer, more historically accurate, more persuasive. History class, labelled. De La Paz et al. (2014): grade 8, about 0.5 SD on historical-argument writing — younger edge.

⁹⁵Sarah Brown and Michaela Gummerum (2025): 15 in the younger cell (11–16), 17–18 in the older cell (16–20); accuracy prime null; look still often outruns meaning. Julie Coiro et al. (2015): 12- to 13-year-olds used a copyright symbol as a credibility cue — younger; look-outruns-meaning still warns this band.

⁹⁶National Center for Education Statistics, PFI 2016 (NCES 2020-001): library 66 percent as a source of curriculum and books (9th–12th 58). 2023 subject tables unverified in this stream. NYPL mission language includes exploratory conversations — mission, not a P4C RCT.

Two speakers, two jobs. They are not the same kind of speech.

There is no homeschool trial of “two pages about the same storm” or “posted hours versus clock” in the sources this book rests on.⁹⁷ The honest pitch is the habit on known stakes, often enough that the question is familiar.

The younger two-source week in this house already asked for a second, independent source on a recap, a spec sheet, two storm pages.⁹⁸ Those objects still work. They are not this week’s added grain. What this book adds is a fuller leave-this-page on ordinary late-high-school stakes: posted hours versus a clock; a job posting versus a shop review; a claim in a short essay versus the named page, opened. Naming the family is not reprinting the bank. The civic leave-the-page weeks of another book in this house are the wrong grain. One pointer. Then teach at 15–18 with a real recap and a real clock.

If a teammate later repeats “dominated,” repeating “dominated” as the thing to knock down is the rumor. Repeating “how could we check?” — look at the box score, look at time of possession, look at what *dominated* is being asked to mean — is the check. Same shape if a short essay repeats “the article said.” Repeating the article’s verb is the rumor. Repeating the second named page is the check. That is a handbook translation onto sports and essay-claim, not a trial of the handbook at this age.⁹⁹ Stay on those objects.

Wrong answers you should be able to hear

These are illustrations, not portraits.

1. **Two tabs from the same site, offered as two sources.** One speaker repeating themselves. Ask: are these independent?
2. **A rant about “the media,” or Google’s ranking treated as a trust ranking.** Leave the rant. Return to two labels, two books, two looks, posted hours versus clock.

⁹⁷No homeschool RCT of “two pages about the same storm” or “posted hours versus clock” was fetched for this book.

⁹⁸*Critical Thinking for Young Minds* already named two-source on a recap, a spec sheet, two storm pages at 11–15. Not reprinted as if job-hours versus clock and essay-claim versus named page were already the centre. This chapter’s added grain is the fuller leave-this-page on those ordinary stakes.

⁹⁹Lewandowsky, Cook, Ecker, et al., *The Debunking Handbook 2020*: backfire rare; continued influence real; repeat the check, not the rumor. Translation only, sports/snack/essay-claim: repeat the box score, not the recap’s verb. Not a 15–18 RCT of the handbook.

3. **A finished-looking posting, treated as already checked.** Official-looking is a look, not a second speaker. What's a second place — the clock, the handbook, what they were told?
4. **A fluent recap with no box score.** Chapter 1's mash, now as a two-source miss. Leave the recap.
5. **Picking a team.** Two storm pages can disagree. The job is where they agree and where they do not, not a loyalty test.

Five-minute parent warm-up

Take one finished-looking page already in the house: a recap, a review, a posting, a paragraph. Ask yourself who wrote it, what would show the claim, and what a second place would be. Then look at that second place if it is cheap and safe. Notice whether you wanted to stay on the first page because it was fluent. That is what you can learn this week: how to leave a fluent recap for a box score, how to leave posted hours for a clock, and that two sources can disagree without anyone having to pick a team.

How to teach it this week

Session shape

Warm-up (2 minutes). Put two objects down. Recap and box score. Or two forecasts. Or a generic hours sign and a clock. Name them as two speakers.

Short model (2 minutes). You leave the first page out loud. "The recap says dominated. I'm going to leave this page. The box score is a second place. Where do they agree?" Stop. Do not finish their comparison.

Student attempt (5–10 minutes). They name a claim, name two places that are not the same speaker, look, say where they agree.

One good question:

"What's a second place we could look?"

Mixed practice (5 minutes). A smaller pair: two labels, or the essay-claim and the named page.

Exit ticket (3–10 minutes). One written line: the claim, the two places, where they

agree. Dated. Sources named. Ages 17–18: where they don't agree, too, and what kind of speech each one is.

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, or the clock) say?”
- “Where do they agree? Where don’t they?”
- “You do not have to pick a team.”
- “Can you write that so a stranger could follow it?”

Ask one. Wait. Look at the second object, not at the student, if the silence is hard.

First try-it for the student

Recap versus box score, kitchen, 5–15 minutes. A recap and a box score or table of the same game. Opening: “What’s a second place we could look?” Skill: two-source; fluent $\neq$ check.

How to fade help

First time: you name the second place. Second time: they name it. Third time: they leave the page before you ask. Fade from “here is the box score” to “what’s a second place?” Do not grab the comparison. Do not turn the check into a gotcha at work or on the sideline. Do not assign a civic-web item because the student is the age of a civic-web study.

When to stop talking

When two places have been named, looked at, and compared on one claim. If the talk has become a rant, return to two labels. If the talk has become citizen-journalism, return to ordinary stakes. Stop.

Ages 15–16

Two-source *use* when two texts are supplied. Name both speakers. Say where they agree. Spoken plus one written line. Parent holds any tool account. Look still often outruns meaning: they may trust the posting’s look, the recap’s verb, the review’s length. Ask who wrote it anyway. Do not expect unaided leave-this-page on an unfamiliar kind of page. Near: another recap, another pair of labels.

Ages 17–18

Nokes's 16–17 sample sits here: multiple texts help sourcing when they are supplied. A job posting versus a shop review, posted hours versus a clock, can be a weekly object. Name both sources. Say where they agree and where they do not. Write the line a stranger could follow. Optional: what kind of speech each one is (recap versus table; review versus spec; posting versus clock). Parent co-holds tools. Closed-window paragraph after any tool. Still constrained: two tabs from the same site will still feel like two sources; fluency will still feel like a check; far transfer is still an open question.

Practice that actually builds learning

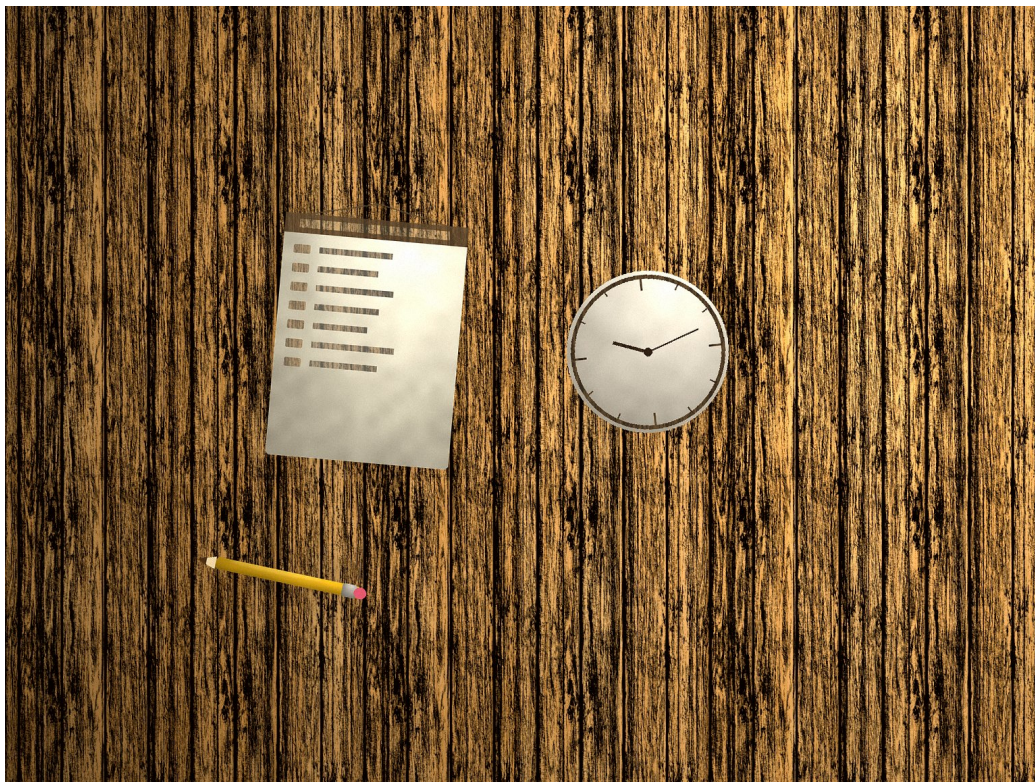


Figure 10: A generic posted-hours sign beside a clock, no shop brand, no readable interface.

Kitchen, library, after a shift, on an errand, after a game: the places are the practice. Leaving the page is the job.

Try-it: Recap versus box score (in-home: kitchen; after-game cousin)

Time. 5–15 minutes.

Materials. A recap and a box score or table of the same game. Dated notebook.

Safety. No humiliation of players. After, not during. Greeking in this book's pictures; your real recap may have a league mark — you are looking at numbers, not running a brand lesson.

The fun. Catching the verb against the numbers.

The skill. Two-source. Fluent $\neq$ check.

Ages 15–16. Name the recap and the table. Where do they agree?

Ages 17–18. Who wrote “dominated”? What would show it? The table. Write the line. Repeat the check (the numbers), not the rumor (the verb) if someone repeats “dominated” later.

Illustration, not a reported family: the recap says dominated. Possession nearly even. The student leaves the recap. They do not have to pick a team. They write what both speakers said.

Try-it: Two storm pages / two forecasts (in-home: table, then window)

Time. 5–15 minutes.

Materials. Two pages about the same storm, or two forecasts, then the sky or a rainfall table.

Safety. Ordinary weather. Not a climate-as-policy seminar. Skip live-news-cycle pages that are not a storm.

The fun. Two speakers, one sky.

The skill. Sourcing (who wrote the page); corroboration (do they agree); contextualization-lite (when was it issued, for which town). Nokes *shape*, ordinary object.

Ages 15–16. Two pages or two forecasts, then the window. Where do they agree?

Ages 17–18. Who issued each, for which town, when. Where they agree, where they don't. Then the sky. You do not have to pick a team. Write both names.

Try-it: Job hours versus clock / posting versus shop review (out-of-home: after a shift or on an errand)

Time. 3–10 minutes after, not during.

Materials. Posted hours, a clock. Or a job posting and a shop review of the same place.

Safety. No public quiz in front of a supervisor. No undercover audit. No gotcha against a shop. Wait in private. Ordinary looking.

The fun. Two speakers, two jobs.

The skill. Fuller leave-this-page on ordinary stakes. They are not the same kind of speech. A posting lists what the employer claims. A review narrates a customer's visit. Hours on the door are a claim. The clock is a look.

Ages 15–16. Posted hours versus clock. What does each say?

Ages 17–18. Posting versus review, or hours versus clock. What kind of speech is each? Write the line after, not at the door in front of anyone who works there.

This is the object the younger two-source week could only point at. It is this book's added grain. It is still not journalism school.

Bus-stop cousin, two to five minutes of waiting you were doing anyway: a posted time versus the clock. Public quiet. No lecture to strangers. Same two speakers, smaller stage.

Handbook cousin, after a shift: what the printed list said versus what they were told. Later, in private. The parent is not interrogating a supervisor. The student is noticing two versions of a task instruction. That is leave-this-page. That is not an audit.

Try-it: Two library books on one animal or one storm (out-of-home: library, then table)

Time. 10–20 minutes at the library, then a short write at the table.

Materials. Two books on one safe topic. Call numbers or titles named in the notebook.

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

The fun. Two blurbs that do not quite match.

The skill. Two-source; steelman the blurb; name both sources; say where they agree.

Ages 15–16. Two books, where they agree, one written line.

Ages 17–18. Two books, agree and disagree, what would change your mind, a short page a stranger could follow.

In-home cousin: the same two books on the table tomorrow. The library is a free research hour, not a philosophy kit.

Try-it: Review versus spec sheet (in-home: kitchen; out-of-home cousin: store)

Time. 5–15 minutes.

Materials. A product already bought, or two packages in a shop you were in. Spec sheet or side panel.

Safety. Aisle courtesy. No body talk. No food sermon. No trapping the clerk. No shoplifting a “test.”

The fun. “Best” versus listed capacity.

The skill. The reviewer is a speaker with a job. The spec sheet is another speaker with a job.

Ages 15–16. Front versus side. Where do they agree?

Ages 17–18. Review versus spec. What kind of speech is *best*? What kind of speech is the listed number? Write the line.

Try-it: “The article said” / essay-claim versus named page (in-home: sofa)

Time. 8–15 minutes.

Materials. One short article or a paragraph in a short essay plus a second named page.

Safety. Skip live-news-cycle pages. Ordinary reading. Not a humiliation of the writer.

The fun. Catching the mash: one-source fluency offered as a check.

The skill. Second named look. “The article said” is a starting point. The named page, opened, is the look.

Ages 15–16. Open the second page. Where do they agree?

Ages 17–18. Rewrite the essay sentence so a stranger could follow the because and the look. If the named page does not carry the claim, correct the sentence.

Try-it: Kitchen cousin — two-recipe / two-label (in-home)

Time. 5–15 minutes.

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

Safety. No food-shaming. Water, ice, two labels — not a flame for anyone who cannot already cook.

The fun. “Serves four” versus the tin.

The skill. Two-source on a claim you can actually check.

Ages 15–16. Two labels, one claim, look.

Ages 17–18. Two labels plus one cooked or mixed result if you were cooking anyway. What did each speaker say, and what did the pan say?

One incorrect example to diagnose

Illustration: a fluent recap, no box score. Or two tabs from the same site’s storm desk, offered as two sources. Or a finished-looking posting treated as already checked because it looks like a posting. Or a rant about “the media” instead of two storm pages. Your move: “What’s a second place we could look?” Name two

places that are not the same speaker repeating themselves. Look. Say where they agree. You do not have to pick a team. If they later repeat “dominated,” repeat the table, not the verb.

Talk box

Exact opening question. “What’s a second place we could look?”

Not: “What is corroboration?” Not: “Who is lying?”

Follow-ups (three to five).

1. Who wrote this?
2. What would show the claim?
3. What does the other page (or the table, or the sky, or the clock) say?
4. Where do they agree? Where don’t they? You do not have to pick a team.
5. Can you write that so a stranger could follow it?

How to wait. After you ask, a slow three. After they stop, wait again. Look at the second object — box score, other storm page, clock, second book, spec sheet, named page — not at the student, if the silence is hard. After “write,” task-completion time. At a job, wait in private. Stahl is think-time, classroom-origin. Rowe is science class.¹⁰⁰

What a stuck silence usually means. They named two tabs from the same site. They offered a rant about “the media.” Wait-time 1 was zero. They treated Google’s ranking as a trust ranking. They treated a finished-looking posting as already checked. They think leaving the page means finding fault with people. They think two sources means picking a team.

Debug. Same-site tabs → “is that a second speaker, or the same speaker twice?” Rant → return to two labels, two books, two looks, hours versus clock. Official-looking posting → the clock. Ranking-as-trust → “ranking is not a reason; what’s a second place?” Picking a team → “where do they agree?” Adult lectures → silence is the treatment. Leave-this-page becomes citizen-journalism → ordinary stakes, after not during, no supervisor as audience.

Blocked for a new move: this week, leave this page for one other independent look. Mixed: when the second place is a graph, Chapter 5. When the comparison

¹⁰⁰Mary Budd Rowe (1972/1974): science-class wait. Robert J. Stahl, ERIC Digest ED370885 (1994): think-time, classroom-origin.

should be a sentence a stranger could follow, Chapter 6. When the object is a fair test, Chapter 7.

For the student

One page can feel finished. That is why we leave it.

What's a second place we could look?

A recap and a box score are two speakers. Two storm pages are two speakers. Posted hours and a clock are two speakers. Two library books are two speakers. A review and a spec sheet are two speakers. Your essay and the page it cites are two speakers. Two tabs from the same site are often one speaker twice.

You do not have to pick a team. You have to name where they agree, and where they don't.

Tiny worked example.

Claim: we dominated.

First place: the recap.

Second place: the box score.

Where they agree: both name the same match.

Where they don't: the recap's verb is bigger than the table's numbers.

Write: *I claim the recap overstated "dominated" because possession was nearly even. We checked the box score. Someone who disagrees would say the recap was talking about the last ten minutes — we would still need the table for those minutes.*

Try 1. Name a claim. Name two places that are not the same speaker repeating themselves. Look. Say where they agree.

Try 2. After a shift or an errand, without making a scene: what do the posted hours say, and what does the clock say? Write it later. Or: two books on one animal or one storm, titles named, where they agree.

Explain it back. Why are a job posting and a shop review not the same kind of speech? Or: why are a recap and a box score not the same speaker? Use this

week's objects. Do not use a slogan.

Challenge. Take a finished-looking paragraph you wrote. Open the named page. Rewrite so a stranger could follow the because and the look. If the page does not carry the claim, correct the sentence.

You are allowed to wait. You can change your mind when the second place goes the other way. That is not losing. A fluent page is a starting point. It is not the check.

If it isn't clicking

Diagnostic 1. They stay on the fluent page, or they offer two tabs from the same site, or they treat a posting's look as a check.

Next move. Put the second object in their hands before you ask again. Box score. Clock. Second book. Side panel. Named page. "Is this a second speaker?" If they still stay, you name the second place once, they look, then they say where the two agree. Correct the sentence if the look kills it.

Diagnostic 2. They rant, pick a team, or turn the hour into gotcha journalism.

Next move. Return to two labels, two books, two looks, hours versus clock. "You do not have to pick a team. Where do they agree?" After a shift: later, in private, not at the door. No supervisor as audience. Ordinary looking is the job.

Diagnostic 3. Wait-time 1 was zero, or they think "critical" means finding fault, or they want a tool to "check this page" without looking.

Next move. One question. Wait. Look at the object. A tool that invents whether the shop is closed is banned. You may, after they tried, ask a tool to diagnose a comparison they already made. You decide. Slow down to recap-versus-table if job hours feel too public. Go ahead when they can name two independent places and say where they agree, on a known stake. Get a human tutor if reading the two pages is the barrier — that is reading, and it deserves that adult.

No shame. A fluent page fooled a lot of people who stayed on it. Leave it. Look at one other thing.

Tools, including AI

Short. Point back to the thinking hour.

After they have tried, you may ask a tool to explain this page *to you* from a named book page, or to diagnose a two-source comparison they already gave. Extra questions you vet. Throw out any that import a live controversy, a secret, a pretend expert, or a civic-web item this book does not assign. Do not ask the tool to invent who started, whether the shop is closed, what the rainfall was, or what the posting requires. Open the named page. Open the clock. Open the second book.

You may not park an unsupervised chatbot as the only partner. You may not ask it to write the comparison and paste it as theirs. You may not treat two URLs the tool produced as two sources until you open them. Language models invent sources; if you asked a tool for a paper, open the paper.¹⁰¹ 15–16: you hold the account. 17–18: you co-hold; closed-window paragraph after any tool.

One crutch sentence: a tool that finishes the look for you can make practice look better and leave them worse when the window is closed.¹⁰² The unaided leave-this-page is the student's.

A thinking tool is not a secret friend. It does not get to be the second source.

What “done enough” looks like

You can leave a fluent recap for a box score, and posted hours for a clock, without making a scene. The student can name a claim, name two places that are not the same speaker repeating themselves, look, and say where they agree.

Checklist

- The opening “What’s a second place we could look?” is in your mouth.
- Recap versus box score, two storm pages, hours versus clock, two library books, review versus spec have each had a chance, or a honest subset with

¹⁰¹Walters and Wilder (2023, *Scientific Reports*): 55 percent of GPT-3.5 citations and 18 percent of GPT-4 citations were fabricated in that study of short literature reviews. If a parent asked a tool for a paper, open the named paper. Do not update those percents to 2026 models without a new paper.

¹⁰²Bastani et al. (2025, *PNAS*): high-school math trial; unguarded chatbot as crutch. One sentence.

both in-home and out-of-home.

- Civic-web items were not assigned. A high-school evaluation study is why the habit is taught, not this week's worksheet.
- Two tabs from the same site are heard as one speaker.
- You do not have to pick a team.
- Ages 15–16: two speakers named, where they agree, one written line, when the texts are supplied.
- Ages 17–18: agree and disagree, sources named, a sentence a stranger could follow, posting-versus-review or hours-versus-clock as a weekly object.
- After, not during, at a job. No undercover audit.
- History-class trials were not treated as a generic gym. The shape was: more than one document, named speakers, a look.
- The year's title is still English, or Science, or History. Not Critical Thinking I. Not a diploma.

Placement by skill, not birthday. If they still treat fluency as a check, stay with recap versus table. If they cannot yet leave posted hours for a clock without a scene, practice the pair at the kitchen table with a photo of a generic sign, then try after a shift in private. Revisit next Tuesday on a similar pair. Near is the honest hope.

You know how to leave the page. They know what to try today: name a claim, name two places, look, say where they agree.

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 fifteen to eighteen 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. Robert Ennis's public list of thinking abilities includes elementary graphs and maths, which is why a rainfall picture belongs in this book without turning the book into a statistics course.¹⁰³ It is also a move you can practice on rain, a box score, a homework sheet, a library-hours poster, and a serving-size table already in the house. You do not need a culture-war infographic. You do not need a campaign dashboard. 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 fifteen- to eighteen-year-olds.¹⁰⁴

¹⁰³Robert 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. Susan 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." 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. Access date for sources in these notes: 2 September 2026.

¹⁰⁴Yan 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

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. A short essay that cites “a huge jump in rain” without naming the axis. 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, say what the picture does not tell them, and write one sentence a stranger could follow has practiced deciding what to believe on a domain they actually know.

A fluent sentence is not a check. Leave this picture and look at the axis, the units, and the numbers. Then write what you actually saw.

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, then ask for one written sentence. 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.¹⁰⁵

a promise, not a 15–18 randomized trial. Object of practice in this chapter: a rainfall graph. Full cell tables remain as marked in the research brief.

¹⁰⁵Robert 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

- **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.
- **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.¹⁰⁶

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.” Do not ask the student to design a deceptive graph as the lesson. You are teaching how to *read* a picture, not how to manufacture one that misleads.

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

graphs and maths.” This chapter is a thinking manual that uses elementary graphs; it is not a mathematics textbook. Susan 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.” 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. Access date for sources in these notes: 2 September 2026.

¹⁰⁶Daniel 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”). Priti 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 as marked in the research brief.

asks what the *table* actually shows, then what it does not.

A short essay that cites “a huge jump in rain” without naming the axis is the mash wearing a graph. The sentence looks finished. The axis was never named. That is this book’s added object meeting this chapter: a written reason still has to survive the look.

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.

College-readiness tests sometimes put a graphic on a reading item. Notice the item type if it is already on the table: title, axis, units, what is missing. Those sittings are literacy tests at these depths, not thinking diplomas and not this chapter’s course.¹⁰⁷ Do not build a prep week out of rainfall.

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.

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.”

¹⁰⁷College Board SAT Reading and Writing pages and Student Guide; ACT Description of the Reading Test. Informational graphics appear as literacy items (Information and Ideas / Integration of Knowledge and Ideas). They are reading objects at these depths, not critical-thinking tests and not this chapter’s course.

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, or the essay as the axis. “The write-up said we dominated, so the numbers must show that.” “My paragraph already said huge jump.”

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

What to say. “What’s a second place we could look? Let’s lift one number. What does *dominated* mean if we use that number? Can you write that so a stranger could follow it?”

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. Or you treat a college-readiness graphic as a personality test.

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

What to say. Ask one 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.

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.¹⁰⁸

¹⁰⁸Robert 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

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. Write the sentence you will ask for at the end: *I claim X because Y. We checked by Z.*

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.

wait-time trial; none was opened for this book.

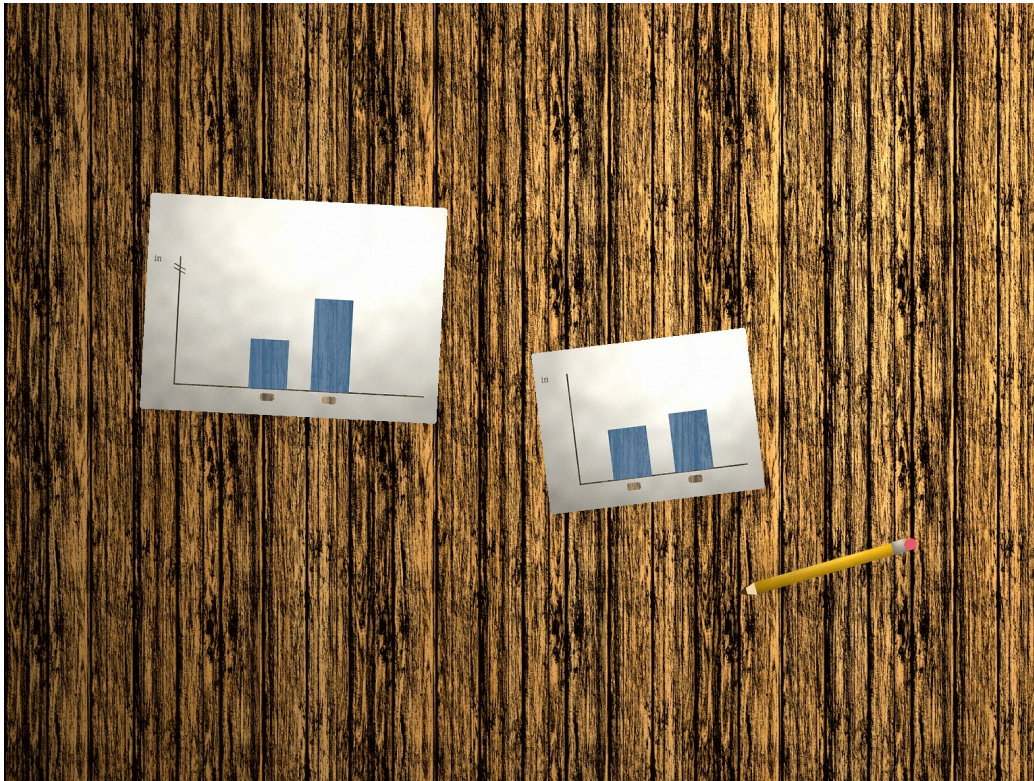


Figure 12: Two rainfall bars, April 48 mm and May 56 mm, y-axis starting at 40; the same numbers redrawn from zero on a second scrap. Generic, no logos

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 a written sentence: “Can you write that so a stranger could follow it? Claim, because, how we checked.”

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: one number lifted, one comparison, one thing the picture does not say, then one dated sentence a stranger could follow. 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 for a first try. At fifteen to eighteen, one dated line is the week’s win: title, one number, one comparison, one missing piece, how we checked. 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 → they write the sentence without you dictating it. 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

15–16. Keep the picture near. Two bars. A simple table. Title, axes, units, one comparison, then one written line. First-order is enough: I thought it was a leap; we redrew from zero; the numbers are 48 and 56; we checked by redrawing from zero. 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 honest: what two months do not tell you. Do not ask them to predict a climate. Dual focus, when it appears, is still often prompted: “What would someone who only saw the chopped picture say?” Parent holds any tool account. The unaided sentence is the student’s.

17–18. 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 a short reason plus the check, sometimes a two-sentence steelman of the caption (“someone who only saw the chopped bars would say huge”). They can notice a finished-looking paragraph that cites a graph without naming the axis. 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.¹⁰⁹ Parent co-holds any tool account. After any tool, a closed-window paragraph. Turning eighteen is not a thinking birthday, and it is not a licence to skip the axis.

Placement is by skill, not birthday. An eighteen-year-old who still reports “huge” without the axis is still in the 15–16 band of this chapter. A fifteen-year-old who catches “this starts at 40” and writes the check is already practicing the 17–18 catch. A publisher’s “grade 11 critical thinking workbook” is a scope, not a legal

¹⁰⁹Daniel 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”). Priti 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 as marked in the research brief.

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. Dated notebook for the sentence.

Safety. None special. Ordinary paper.

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 a fifteen-to-eighteen trial of that noticing. Then: write one sentence about what the graph actually shows.

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. Then write: *I claim the jump looks large because the axis starts at 40. We checked by redrawing from zero.*

15–16. You draw the chopped axis if they do not have a real graph. They lift and compare. You prompt the redraw. One written line is enough.

17–18. They name title, units, and axis start first. After the redraw, they say whether “huge” was the numbers or the picture, and they write the check without you dictating it. 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.

Materials. A recap already on the table and a box score or a simple table of minutes / points for the same game. Greek the league marks in any illustration; use a real table you already have.

Safety. No humiliation of a player. No sideline interrogation during a game. After, not during.

The fun. Catching the recap's verb against the numbers.

The skill. Two-source meets graph. Read the data, then between. *Dominated* is a caption. The table is a look.

How to run it. Read the recap's word. Opening question: "What does this table actually show?" Lift one number. Compare two rows if you have them. Ask what *dominated* would have to mean to match that number. Write one sentence a stranger could follow.

15–16. One number is enough. "We scored 11 and they scored 14. The recap still said dominated."

17–18. Two numbers and a missing piece: time of possession, turnovers, who started. Then the sentence. If they want to argue fairness instead of the table, postpone fairness and stay with the numbers for this sitting.

Try-it 3 — Homework graph, table or car

Time. 5 minutes. Do not turn the ride into a lecture.

Materials. The sheet already assigned.

Safety. Do not do the homework for them.

The fun. One question they can actually answer.

The skill. Title, axes, units, what is missing. One Curcio-level question, not a rescue of the whole sheet.

How to run it. Point at the picture. "What does this graph actually show?" Wait. If they skip the axis: "Where does this picture start?" Then stop. The rest of the sheet is their work.

15–16. Title and one number.

17–18. Title, axis start, one comparison, one missing piece. If a tool later “explains” the graph, they still write a closed-window sentence from the picture itself.

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

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

Materials. A posted graph or table: library hours, a weather strip, a simple bar, volunteer sign-in totals. Generic looking. Public quiet.

Safety. Ordinary looking. No lecture to a stranger’s child. No gotcha against a librarian or a clerk. Hands off posted paper.

The fun. “What does this actually show?” in the wild.

The skill. Read the data where the picture already lives. Cue if needed: “this is like the rainfall picture.”

How to run it. Stop at the poster. Opening question: “What does this graph actually show?” Wait. Lift a number or a closing time. Ask what the poster does *not* tell you — holiday hours, which desk, which week. Write the sentence later, at the table, dated.

15–16. One number or one closing time, spoken.

17–18. One number, one missing piece, and a later written line. If they treat the poster as already trustworthy because it is printed, that is information. Printed is a look, not a second look.

Try-it 5 — Nutrition panel as a table, kitchen cousin

Time. 3–8 minutes.

Materials. One package already bought. Front of the box and the side panel.

Safety. No body talk. No food sermon. No tasting unknown things. Aisle courtesy if you do this in a shop you were already in.

The fun. Serving size as a table. “Best” on the front versus listed amount on the side.

The skill. Claim versus table. Two-source with the front of the box. The panel is a graph's cousin.

How to run it. Read the front's word. Turn the box. "What does this table actually show?" Serving size first. Then one number. Write one sentence if the sitting can bear it.

15–16. Serving size and one number.

17–18. Serving size, one number, and what the front does not say. Still no 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 a chopped axis?"

Follow-ups.

1. Where does the axis start?
2. What would the same numbers look like from zero?
3. Which month was wetter, and by how much?
4. What does this picture *not* tell you?
5. Can you write one sentence a stranger could follow? You may change your mind about "huge."

How to wait. After you ask, a slow three. Three seconds is a convention from classroom think-time, not a homeschool study.¹¹⁰ After they stop, wait again. If they are mid-reason, do not cut them off. Look at the graph, not at the student, if the silence is hard. After "write the sentence," that is task-completion time, not a three-second wait. At fifteen to eighteen the shrug often looks like refusal. Do not rescue it. At a library poster, wait in public quiet. Do not cite science-class wait-time as a homeschool trial.¹¹¹

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; 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.

¹¹¹Mary 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

What a stuck silence usually means. They skipped the axes. They moralised the picture. They do not know enough about rainfall to read beyond. Wait-time 1 was zero. They treated a college-readiness graphic as a personality test. They offered a why-story where a look was asked for. They think “critical” means finding fault with whoever drew the bars. They think a finished-looking paragraph that cites a graph is already a check.

If they are stuck. Smaller question. “What number is this bar?” Wait. Point at the axis. Do not fill the silence with the right answer. Do not turn the table into a fight about who is trying to trick whom.

Blocked, then mixed

Blocked. The first sitting is rainfall. Two bars. Chopped axis, then redraw from zero. Stay there until lift, compare, and missing piece can happen on that picture.

Mixed. Then a box score as a table. Then a homework graph. Then a poster in the wild. Mix so the move is not glued to rain. Near transfer to another rainfall picture, another table, another poster is the honest hope. Far transfer to an unfamiliar later chart, unaided, is not a promise.¹¹²

One incorrect example to diagnose

A short essay on the table. The paragraph is fluent. Topic sentence: “Rainfall jumped hugely in May.” The student cites “the graph.” The axis is never named. The numbers are never lifted. The paragraph looks finished.

What it usually means. A caption wearing a topic sentence. The mash of a why that makes sense — the bars *look* tall — with evidence that the claim is true.

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.

¹¹²Daniel 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”). Priti 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 as marked in the research brief.

What to say. “What does this graph actually show? Where does the axis start?” Wait. Redraw from zero. Then: “Can you write that so a stranger could follow it?” If the sentence cannot survive the check, correct the sentence. That is teaching. Silence in the face of a false caption is not kindness.

For the student

A graph is a claim someone made with ink. Your job is not to distrust every picture. Your job is to ask what this one actually shows.

Try this. Two months of rain. April, 48 millimetres. May, 56. The picture starts at 40. May’s bar looks like a leap. Now draw the same numbers from zero. The leap shrinks. The numbers did not change. “Huge” was the picture’s.

Tiny worked example.

Claim the picture seems to make: huge jump.

Lift: April 48 mm. May 56 mm.

Between: May was wetter by 8 millimetres.

Beyond: two months do not tell you about a year.

Write: I claim the jump looks large because the axis starts at 40. We checked by redrawing from zero.

Try 1. A rainfall picture already in the house, or two bars you draw. Lift one number. Compare. Say where the axis starts. Redraw from zero if it does not start at zero.

Try 2. A box score or a homework graph. What does this table actually show? One number. One thing it does not tell you.

Explain it back. In your own words: what is the difference between lifting a number, comparing two numbers, and saying what the picture does not tell you?

Challenge. Write one dated sentence a stranger who was not at the table could follow. Claim, because, how you checked. If the look goes the other way, change the sentence. That is not losing.

You are allowed to wait. You are allowed to say “I don’t know yet.” You are not required to invent a climate from two bars. You are required to look at the axis.

If it isn't clicking

They skip the axis every time. Slow down. Stay with two bars. You point at the start of the picture before they speak. Fade that point after they start pointing themselves. If they still report “huge” after a redraw, name the better reason: “The numbers went up by 8. The picture started at 40.” Then ask them to say it. Do not crush the talk. Do correct the caption.

They can lift a number and freeze on compare. The between job is where errors cluster.¹¹³ Give the two numbers out loud. Ask “by how much?” Wait. If needed, write $56 - 48$ on scrap. The arithmetic is not the insult. The missing amount is the problem. When they can name the amount, ask whether 8 is a leap or a picture of a leap.

They jump to a story the picture cannot carry, or they treat every chopped axis as a villain. They do not have the knowledge a “beyond” question needs, or they think “critical” means finding fault. Point back at two months. “What does this picture *not* tell you?” If the sitting becomes a sermon, stop. Pick rainfall again tomorrow. If they cannot yet hold title, axis, and one number after several sittings, get a human who already teaches graphs — a maths tutor, a co-op teacher — for the graph part. You still own the thinking question: what does this actually show?

Go ahead when they can lift, compare with an amount, catch a chopped axis, and write one sentence. Stay longer when the caption still arrives as the look. A birthday does not settle it.

¹¹³Robert 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. Susan 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.” 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. Access date for sources in these notes: 2 September 2026.

Tools, including AI

Point back to the thinking-hour box. Keep this short.

After the student has tried, you may ask a tool, on your account, to explain *this page* to *you* from a named book page, or to give extra questions you then vet. Throw out any that import a live controversy, a pretend expert, or a civic-web item. A labelled SCRIPT after the try is for you to say, or a labelled sequence the student may read after the attempt — not a paragraph for them to copy as their reason. A hint after an attempt is not the finished reason. A diagnosis of a reason they already gave is yours to hear and decide.

You may not park an unsupervised chatbot as the only partner. You may not ask a tool to invent last week’s rainfall numbers, whether the library is open, or who scored. You may not ask it to write the student’s sentence and paste that text as theirs. You may not invent an expert identity and treat that voice as a person. You may not grade the sitting from a detector score. You may not print a certificate of thinking. You may not hand them an agent as a thinking partner.

Ages 15–16. You hold the account. You are in the room. SCRIPT after the try. The unaided reason is the student’s.

Ages 17–18. You co-hold. They may type in your presence, on an account you can open. Co-holding is not unsupervised. Extra questions still pass you. After any tool, a closed-window paragraph. Exam terms for any Advanced Placement sitting they actually take still apply to their own submissions.¹¹⁴

One crutch sentence, then teach: in a high-school math trial, an unguarded chatbot made practice look better and left students worse on the test with the window closed.¹¹⁵ A fluent reason from a machine is performance, not the student’s check. Keep accounts, logs, and keys where you can open them. A thinking tool is not a secret friend.

¹¹⁴College Board, 2026 AP Exam Terms, updated 27 April 2026, Section 4: no part of test answers, work, or submission may be generated in whole or in part using any AI tools. Some course projects are open if cited. AP Computer Science Principles is a computer-science exam-term neighbor, one sentence, not a critical-thinking statute.

¹¹⁵Hamsa Bastani, Osbert Bastani, Alp Sungu, Haosen Ge, Özge Kabakçı, and Rei Mariman, “Generative AI Can Harm Learning,” *Proceedings of the National Academy of Sciences*, 2025. Field randomized trial, nearly 1,000 Turkish high-school math students. Unguarded GPT: practice looked better (+48 percent), then unaided isomorphic exam worse (–17 percent) versus never-AI. This is this age’s math trial, used here as one crutch sentence, not as a critical-thinking coefficient.

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. It is not AP Critical Thinking. That course does not exist.

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.
- Writes one dated sentence a stranger could follow: claim, because, how we checked.
- 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.”

15–16 done enough. Spoken sentence plus one written line that names the claim and the check.

17–18 done enough. A short written reason plus the check, sometimes a two-sentence steelman of the caption, sometimes a closed-window paragraph after any tool.

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.¹¹⁶ Turning

¹¹⁶Daniel 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:

eighteen is not a thinking birthday.

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. I know what a finished-looking paragraph without a named axis looks 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. I can write a reason a stranger could follow.

“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”). Priti 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 as marked in the research brief.

Chapter 6

A short written reason

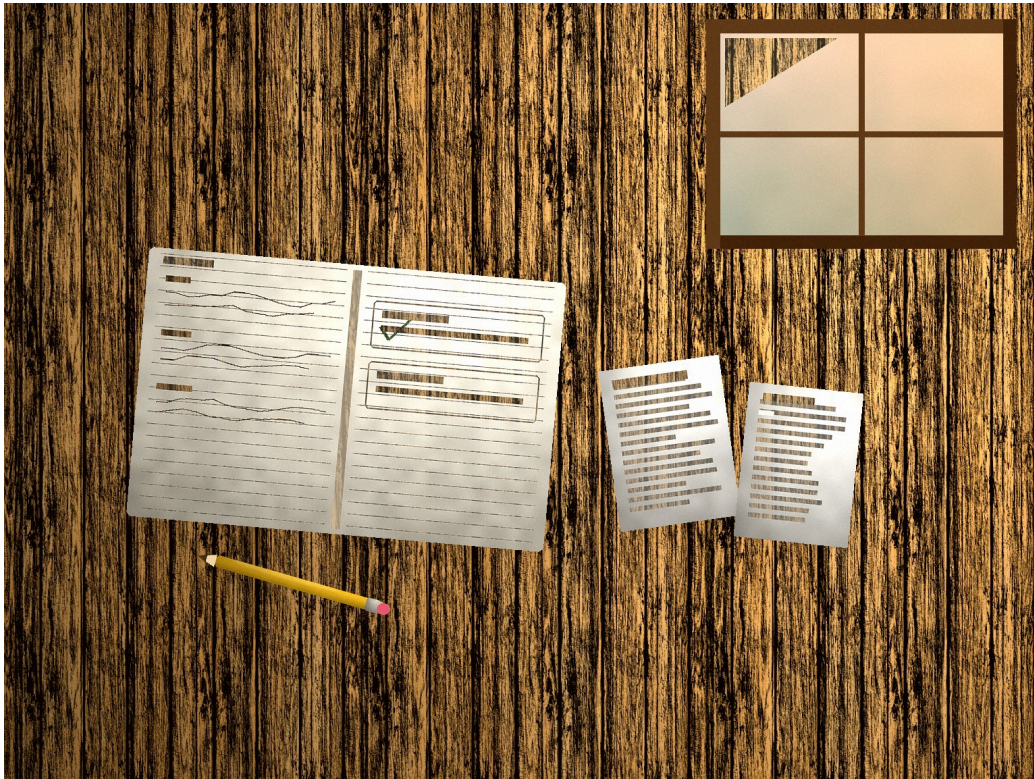


Figure 13: An open dated notebook on a kitchen table, a short reason in ink, two named sources, a pencil, no diploma seal

Why this matters

Can you write that so a stranger could follow it?

That question unlocks this book's added object. Talk is cheap in a family that already talks. A sentence on paper is a different demand. The student has to pick a claim, pick a because, and pick a check that a stranger — someone who was not at dinner, does not share the family joke, does not already know which sibling is “always” late — could follow.

The shape, once:

I claim X because Y. We checked by Z.

Optionally a second sentence: **Someone who disagrees would say...**

Dated. Stimulus named. Sources named.

That is closer to an individual essay after a real conversation, to a planned argument with named parts, and to “judge this paragraph and say why,” than it is to a shrug.¹¹⁷ It is not a five-paragraph course. It is not a programme for raising a national writing score. It is not a college-readiness expression drill. It is not a college thinking inventory. It is not a 4,000-word research paper. It is not generic critical thinking in a bottle.

Extra essay writing without an interlocutor is not the intervention. In a multi-year classroom study of dialogic practice, dual perspective on a later essay reached about four in five of the experimental students versus about one in three of the comparison group. The comparison group wrote more essays. Extra writing did not help.¹¹⁸ The missing interlocutor has to have been in the room. Talk first.

¹¹⁷Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Vehicle for Developing Young Adolescents’ Thinking,” *Psychological Science* 22, no. 5 (2011). Full PDF opened for this book. Dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison at end of Year 2/3; extra essay writing in the comparison group did not help. Copy *shape* (a reason; a counter; a second look; sometimes the other person’s strongest case; then a short written reason), not the paper’s later topics. Comparison-group data show these moves do not routinely develop in this age period without the dialogic activity. The missing interlocutor has to have been in the room. Access date for sources in these notes: 2 September 2026.

¹¹⁸Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Vehicle for Developing Young Adolescents’ Thinking,” *Psychological Science* 22, no. 5 (2011). Full PDF opened for this book. Dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison at end of Year 2/3; extra essay writing in the comparison group did not help. Copy *shape* (a reason; a counter; a second look; sometimes the other person’s strongest case; then

Write. Then look. If the sentence cannot survive the check, correct the sentence.

History-class trials at this age — multiple texts instead of a single textbook, planned argument with documents, historical thinking with an adult who looks at the product — licence the *shape*: more than one document; a named writing move; an adult who reads what was written. They are history-class evidence, labelled as such. They are not a generic thinking gym, and they do not licence a Civil War packet at the kitchen table.¹¹⁹

That is worth the struggle because the house already produces fluent talk. A recap's *dominated*. A captain vote. A rainfall caption. A finished-looking paragraph that cites "the article." Posted hours versus a clock. Each of those can be spoken and still vanish. Ink holds the claim still long enough for a stranger — and for next Tuesday — to see whether the because was a look or a why-story. The parent who can hear a finished-looking paragraph offered as a reason can teach this week. The student who can write one dated sentence, then change it when the look goes the other way, has practiced deciding what to believe or do, with reasons, on a domain they actually know.

This week you can learn the four-part shape — claim, because, other side, check — and that extra essays without someone in the room are not the intervention. Today

a short written reason), not the paper's later topics. Comparison-group data show these moves do not routinely develop in this age period without the dialogic activity. The missing interlocutor has to have been in the room. Access date for sources in these notes: 2 September 2026.

¹¹⁹Jeffery D. Nokes, Janice A. Dole, and Douglas J. Hacker, "Teaching High School Students to Use Heuristics While Reading Historical Texts," *Journal of Educational Psychology* 99, no. 3 (2007). Abstract opened: 128 male and 118 female, ages 16 and 17; eight classrooms; three weeks; multiple texts beat textbook on content and on sourcing/corroboration; full PDF cells as marked in the research brief. Nokes 2010 restatement: contextualization did not move. Susan De La Paz and Mark K. Felton, "Reading and Writing from Multiple Source Documents in History: Effects of Strategy Instruction with Low to Average High School Writers," *Contemporary Educational Psychology* 35, no. 3 (2010): grade 11, n = 81 instruction versus 79 control, same documents; instructed essays longer, more historically accurate, more persuasive. Susan De La Paz and colleagues, 2014: grade 8, about 0.5 SD on historical-argument writing — younger edge. Avishag Reisman, "Reading Like a Historian: A Document-Based History Curriculum Intervention in Urban High Schools," *Cognition and Instruction* 30, no. 1 (2012): 236 eleventh-graders, six months, quasi-experimental; significant main effects on historical thinking, transfer of those strategies to contemporary issues, factual knowledge, and reading comprehension (Stanford extract; cell means as marked in the research brief). School, professional development, documents. **Labelled history-class evidence, not a generic critical-thinking gym.** They licence the shape (more than one document; a named writing move; an adult who looks at the product), not a Civil War packet, not a six-month document-based course at the kitchen table.

the student can write one dated sentence — I claim X because Y; we checked by Z — then look, and correct the sentence if the look goes the other way.

For the parent: understand it yourself

You do not need to be a writing teacher. You do need to hear a fluent paragraph with no named source as a performance, not yet a check, and “because we wanted it more” as a why-story in ink.

Everyday picture. Dinner. Someone says the library closes at six. Someone else says it stays open until eight. Talk can loop. Then a notebook: *I claim the Tuesday hours are until 8 p.m. because the posted sign on the door lists Tuesday 10–8. We checked by looking at the sign on 2 September 2026, then at the clock in the lobby.* A stranger who was not at dinner can follow that. They could walk to the same door.

Precise picture. A short written reason is a product with parts. Claim: a sentence that can be true or not, or fair or not, about something we can look at. Because: evidence *that*, not only a story of why it would make sense. Check: a named look — a second page, a table, a window, a clock, a spec sheet, last week’s list. Other side: the strongest fair version of what someone who disagrees would say, written so they would nod. Date. Stimulus. Sources. That is the load-bearing extra of this book. The thinking hour named the shape. This chapter owns it.

Paper first. Three boxes on scrap — Claim / Reason / Objection — then a fifth line: the sentence a stranger could read plus the check.¹²⁰ A map on a screen can wait. The sentence cannot.

You are allowed to correct the sentence. “Never correct the student” is not this book’s rule. Hearing a wrong because, then asking a better question, then naming a better reason if needed, is teaching. Silence in the face of a false written reason leaves them with the error.

A school assignment that asks for a paragraph is a neighbor, not this chapter’s course. Of thousands of classroom assignments counted in one high-school study, about one in five asked for extended writing of a paragraph or more. A national

¹²⁰Tim van Gelder’s argument-mapping work is university; no large 15–18 randomized trial was opened for this book. Home type = three boxes on paper, then the sentence. Do not cite a university pre-post as a kitchen result.

writing sitting at grade 12 found about one in four students at Proficient — a fact about *school writing*, not a thinking score, and not a gap this kitchen sentence will close.¹²¹ Strategy instruction can improve writing quality. That is writing quality, not a thinking inventory.¹²² The portable piece: do not say “write a reason.” Say the parts.

Wrong answers you should be able to hear

1. A fluent paragraph with no named source. The page looks finished. Topic sentences. No check.

What it usually means. Length was treated as the job. A why-story wearing academic clothes.

What to say. “Can you write that so a stranger could follow it? What is the claim, in one sentence? Because — is that evidence *that*, or a why-story? How did we check?”

2. Extra essays as the whole method. “We’ll just write more.” Or a chatbot paragraph offered as help.

¹²¹Arthur N. Applebee and Judith A. Langer, “A Snapshot of Writing Instruction in Middle Schools and High Schools,” *English Journal* 100, no. 6 (2011): of 8,542 assignments, 19 percent were extended writing of a paragraph or more (high school 17.6 percent) — a population fact about school writing, not a homeschool finding and not a critical-thinking score. National Assessment of Educational Progress, Writing 2011, grade 12: 27 percent Proficient — writing, not critical thinking. Steve Graham and Dolores Perin, *Writing Next, 2007 / Journal of Educational Psychology*: strategy instruction 0.82; setting product goals 0.70 — writing quality, grades 4–12, not a critical-thinking inventory. Katherine L. McNeill, Joseph Krajcik, and colleagues, claim–evidence–reasoning, grade 7, 2006: younger, scientific explanation, pointer only. Robert H. Ennis and Eric Weir, *The Ennis–Weir Critical Thinking Essay Test*, 1985: assessment cousin; manual tables as marked in the research brief.

¹²²Arthur N. Applebee and Judith A. Langer, “A Snapshot of Writing Instruction in Middle Schools and High Schools,” *English Journal* 100, no. 6 (2011): of 8,542 assignments, 19 percent were extended writing of a paragraph or more (high school 17.6 percent) — a population fact about school writing, not a homeschool finding and not a critical-thinking score. National Assessment of Educational Progress, Writing 2011, grade 12: 27 percent Proficient — writing, not critical thinking. Steve Graham and Dolores Perin, *Writing Next, 2007 / Journal of Educational Psychology*: strategy instruction 0.82; setting product goals 0.70 — writing quality, grades 4–12, not a critical-thinking inventory. Katherine L. McNeill, Joseph Krajcik, and colleagues, claim–evidence–reasoning, grade 7, 2006: younger, scientific explanation, pointer only. Robert H. Ennis and Eric Weir, *The Ennis–Weir Critical Thinking Essay Test*, 1985: assessment cousin; manual tables as marked in the research brief.

What it usually means. Writing practice was confused with thinking practice. The interlocutor left the room. A machine finished the sentence.

What to say. Talk first. Then one dated sentence. Then look. If a tool is in the house, it does not write this paragraph as theirs. Point back to the thinking-hour box.

3. A steelman that is actually a straw, or steelman heard as giving up. “They just want to be difficult.” Or: “If I write their side, I lose.”

What it usually means. Dual focus was skipped, or it was heard as surrender.

What to say. “Write it so they would nod. Then we still look. Changing the sentence if the check goes the other way is not losing.”

4. A history packet treated as a thinking gym. A stack of documents about a war, offered as this week’s critical-thinking course.

What it usually means. History-class evidence was borrowed as a generic method. Those trials were history class, with documents and an adult who already taught history.¹²³

What to say. Steal the shape: more than one named source; a claim; a because; a check. Stay with a recap, a rainfall graph, posted hours, two library books on one storm or one animal. The history year, if you have one, is still History.

¹²³Jeffery D. Nokes, Janice A. Dole, and Douglas J. Hacker, “Teaching High School Students to Use Heuristics While Reading Historical Texts,” *Journal of Educational Psychology* 99, no. 3 (2007). Abstract opened: 128 male and 118 female, ages 16 and 17; eight classrooms; three weeks; multiple texts beat textbook on content and on sourcing/corroboratorion; full PDF cells as marked in the research brief. Nokes 2010 restatement: contextualization did not move. Susan De La Paz and Mark K. Felton, “Reading and Writing from Multiple Source Documents in History: Effects of Strategy Instruction with Low to Average High School Writers,” *Contemporary Educational Psychology* 35, no. 3 (2010): grade 11, n = 81 instruction versus 79 control, same documents; instructed essays longer, more historically accurate, more persuasive. Susan De La Paz and colleagues, 2014: grade 8, about 0.5 SD on historical-argument writing — younger edge. Avishag Reisman, “Reading Like a Historian: A Document-Based History Curriculum Intervention in Urban High Schools,” *Cognition and Instruction* 30, no. 1 (2012): 236 eleventh-graders, six months, quasi-experimental; significant main effects on historical thinking, transfer of those strategies to contemporary issues, factual knowledge, and reading comprehension (Stanford extract; cell means as marked in the research brief). School, professional development, documents. **Labelled history-class evidence, not a generic critical-thinking gym.** They licence the shape (more than one document; a named writing move; an adult who looks at the product), not a Civil War packet, not a six-month document-based course at the kitchen table.

5. A diploma line for the sentence. “Written Reasoning I, A.” Or a five-paragraph night. Or a 4,000-word paper asked of a kitchen hour.

What it usually means. The product was inflated into a credit. The title a stranger can read is still English, or Science, or History.

What to say. Date the notebook. Name the stimulus. Name the sources. Keep the title ordinary.

Five-minute parent warm-up

Before the sitting, no student in the room:

1. Write the shape on scrap: I claim X because Y. We checked by Z. Someone who disagrees would say...
2. Say out loud: “Can you write that so a stranger could follow it?” Wait a slow three.¹²⁴ Then wait as if they were writing. That second wait is task-completion time.
3. Write one fluent fake you expect — a paragraph with no source, a why-story in ink, a machine sentence — and the better ask: claim, because, check, other side. Then look.

If those three are fluent, you can hear a finished-looking page offered as a reason. That is the job. The student still writes the sentence.

How to teach it this week

Use the thinking-hour shape. Fill it with a claim you already have: a recap versus a box score, two library books, posted hours versus a clock, a rainfall caption, a paragraph that cites “the article.” Stop while it is still a sitting.

Warm-up (2–4 minutes). Yesterday’s graph or yesterday’s two-source look, from memory. “What did we look at? What did we used to think?” Then: “Today we write it so a stranger could follow it.”

Short model (5–8 minutes).

¹²⁴Robert 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. After “write the sentence,” that is task-completion time.

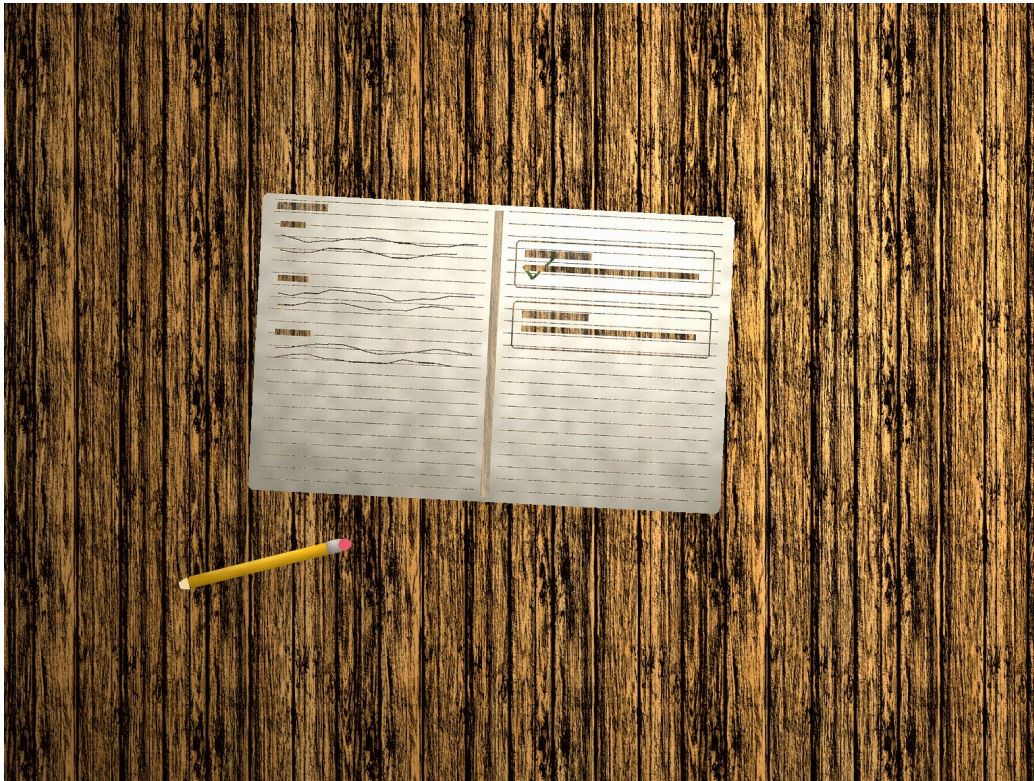


Figure 14: An open notebook, a dated line, two named sources, a check; kitchen table; no teen, no logo

You talk first. A recap that uses *dominated*, and a box score. You say a sloppy spoken version on purpose. Then you write, slowly, where they can see:

2 September 2026. Stimulus: recap of Tuesday's game plus the box score on the same page. I claim we did not dominate because they held the ball longer and scored more. We checked by lifting minutes and points from the table. Someone who disagrees would say the recap's word still captures how it felt.

You wait. You ask whether a stranger who was not at the game could follow that. Then you show the *wrong* cousin on purpose: a fluent paragraph that never names the table. "Is that a check?" Wait. Then stop talking sooner than feels polite.

Exact wording you can steal.

On the product: "Can you write that so a stranger could follow it?"

On the parts: “What is the claim, in one sentence? Because — is that evidence *that*, or a why-story? How did we check?”

On the other side: “What’s the strongest version of what they would say? Write it so they would nod.”

On the look: “If the sentence cannot survive the check, we change the sentence.”

On mind-change: “You may change the sentence. That is not losing.”

On a machine: “After you try. Not as your reason.”

Student attempt. After the model, they write the next one — two books, or posted hours, or the rainfall sentence from Chapter 5 — with you watching. You wait. You do not finish the because. You do not paste a tool’s paragraph as theirs.

One good question. After the attempt: “Would someone who was not at dinner know where we looked?” The student generates the why.

Mixed practice. One sports claim. One two-book page. One hours-versus-clock sentence. Mix, so the move is not glued to one object.

Exit ticket (5–10 minutes, unaided). One dated sentence. Claim, because, check. Tool closed. Spoken first is allowed; ink is the week’s win.

How to fade help. You write the four parts as blanks → they fill because and check while you name claim → they write all four → they catch a fluent paragraph with no source without your prompt. When they can name the missing check without a hint, put the blank scaffold away. Bring it back when a new kind of claim arrives.

When to stop talking. After one model and one question. You hold the key: is there a claim, a because, a named look, a wait? You do not become a lecture about essays. Length can wait. The check cannot.

Age-band moves

15–16. Talk first. One written line that names the claim and the check is the win for the week. Dual perspective *when asked*: “What would someone who disagrees say?” Steelman two sentences, out loud if needed, then on paper. They will still offer a why-story in ink. Hear it. Ask how we know. Then look. Parent holds any tool account. The unaided sentence is the student’s. Do not skip the interlocutor because they can already write a paragraph for English.

17–18. Same moves, slightly heavier grain. A short written reason can be asked regularly to hold the other side. Sometimes a two-sentence steelman. Sometimes a job posting versus a shop review, after, not during. They can notice a finished-looking paragraph in place of a look. They still mash a reason that “makes sense” with evidence that the claim is true, some of the time. They still need the object. Extra essays without you in the room still will not do the dual job.¹²⁵ Parent co-holds. After any tool, a closed-window paragraph. Exam terms for any Advanced Placement sitting they actually take still apply.¹²⁶ Turning eighteen is not a thinking birthday.

Placement is by skill, not birthday. An eighteen-year-old who writes a fluent page with no named source is still in the 15–16 band of this chapter. A fifteen-year-old who writes claim, because, check, and a fair other side is already practicing the 17–18 grain. A publisher’s “grade 11 critical thinking workbook” is a scope, 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. Kitchen, library, and after a shift *are* the practice. They do not replace the named move.

Try-it 1 — Claim + because + check, table

Time. 10–20 minutes. Then stop.

Materials. Dated notebook. A look that is cheap and safe: box score, second

¹²⁵Deanna Kuhn and Amanda Crowell, “Dialogic Argumentation as a Vehicle for Developing Young Adolescents’ Thinking,” *Psychological Science* 22, no. 5 (2011). Full PDF opened for this book. Dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison at end of Year 2/3; extra essay writing in the comparison group did not help. Copy *shape* (a reason; a counter; a second look; sometimes the other person’s strongest case; then a short written reason), not the paper’s later topics. Comparison-group data show these moves do not routinely develop in this age period without the dialogic activity. The missing interlocutor has to have been in the room. Access date for sources in these notes: 2 September 2026.

¹²⁶College Board, 2026 AP Exam Terms, updated 27 April 2026, Section 4: no part of test answers, work, or submission may be generated in whole or in part using any AI tools. Some course projects are open if cited. AP Computer Science Principles is computer science, one sentence, not a critical-thinking statute. There is no AP Critical Thinking.

page, window, posted hours, spec sheet, rainfall redraw.

Safety. Not a fake diploma line. Not a performance for relatives. Curious, not courtroom.

The fun. A page a stranger could almost read.

The skill. The 15–18 product. Title, if any: still English or Science or History.

How to run it. Talk first. Opening question: “Can you write that so a stranger could follow it?” Wait as they write. Read it back without fixing the prose for style. Ask whether the because is a look or a why-story. If the sentence cannot survive the check, correct the sentence.

15–16. One line. Claim and check named.

17–18. Claim, because, check, and “someone who disagrees would say...” Sources named.

Try-it 2 — Steelman on paper, house

Time. 8–15 minutes.

Materials. Dated notebook. The disputed claim: who should be captain, a recap’s verb, a sibling’s “always,” a shop’s “best.”

Safety. No audience of neighbours. No humiliation.

The fun. Writing it so they would nod.

The skill. Dual-perspective written; stranger-readable. Then the check.

How to run it. “Say theirs so they would nod. Now write that version.” Wait. Then: “What’s a second place we could look?” Write the check under the steelman. Inventing a better argument they did not make, then knocking it down, is not steelman. Asking a machine to write the steelman so you can paste it is write-my-reason.

15–16. Two sentences, out loud if the paper freezes, then copied.

17–18. Two sentences plus one point of agreement, still on a safe stake. Then the look.

Try-it 3 — Paper argument map, then the sentence

Time. 8–15 minutes.

Materials. Scrap paper. Three boxes: Claim / Reason / Objection. Then a fifth line: the sentence plus the check.

Safety. No software required. Paper before any app.

The fun. Filling boxes.

The skill. A map scaled to the kitchen. Then ink a stranger could follow.¹²⁷

How to run it. Draw three boxes. Fill them from talk already had. Then write the sentence underneath. Do not download a mapping site and call the download a trial.

15–16. Three boxes plus one line.

17–18. Three boxes, the sentence, and the named sources.

Try-it 4 — Library two-book, then one page

Time. 10–20 minutes at the library, then 10 minutes at the table.

Materials. Two named sources on one safe topic: one animal, one storm, one glacier's measurement method, one sport's rule. Call numbers. Dated notebook.

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

The fun. Two blurbs that do not quite match, then a page that names both.

The skill. Two-source meets written reason. Out-of-home centre with an in-home write.

How to run it. Find two books. Name them. Say where they agree. Say where they do not. At the table: *I claim X because Y. We checked by Z. Sources: [title, call number]; [title, call number].* History-class trials used multiple texts with an

¹²⁷Tim van Gelder's argument-mapping work is university; no large 15–18 randomized trial was opened for this book. Home type = three boxes on paper, then the sentence. Do not cite a university pre-post as a kitchen result.

adult who looked at the product. Steal that shape. Stay with the two books you actually opened. Do not turn the library hour into a document-based course.¹²⁸

15–16. Two titles and one sentence.

17–18. Two titles, where they agree, what would change your mind, the page.

Try-it 5 — Essay-claim versus named page, table

Time. 10–20 minutes.

Materials. A paragraph the student wrote, or a sample paragraph about a match, a shop, a storm, plus the source it cites, opened.

Safety. Not a humiliation of the writer. Skip live-news-cycle pages.

The fun. Catching a finished-looking sentence that has no check.

The skill. A fluent paragraph is not a check. Rewrite so a stranger could follow the because and the look.

How to run it. Read the paragraph. Opening question: “Can you write that so a stranger could follow it?” Open the named page. If the page does not say what the paragraph claimed, change the sentence.

15–16. One claim, one look, one rewrite.

¹²⁸Jeffery D. Nokes, Janice A. Dole, and Douglas J. Hacker, “Teaching High School Students to Use Heuristics While Reading Historical Texts,” *Journal of Educational Psychology* 99, no. 3 (2007). Abstract opened: 128 male and 118 female, ages 16 and 17; eight classrooms; three weeks; multiple texts beat textbook on content and on sourcing/corroboration; full PDF cells as marked in the research brief. Nokes 2010 restatement: contextualization did not move. Susan De La Paz and Mark K. Felton, “Reading and Writing from Multiple Source Documents in History: Effects of Strategy Instruction with Low to Average High School Writers,” *Contemporary Educational Psychology* 35, no. 3 (2010): grade 11, n = 81 instruction versus 79 control, same documents; instructed essays longer, more historically accurate, more persuasive. Susan De La Paz and colleagues, 2014: grade 8, about 0.5 SD on historical-argument writing — younger edge. Avishag Reisman, “Reading Like a Historian: A Document-Based History Curriculum Intervention in Urban High Schools,” *Cognition and Instruction* 30, no. 1 (2012): 236 eleventh-graders, six months, quasi-experimental; significant main effects on historical thinking, transfer of those strategies to contemporary issues, factual knowledge, and reading comprehension (Stanford extract; cell means as marked in the research brief). School, professional development, documents. **Labelled history-class evidence, not a generic critical-thinking gym.** They licence the shape (more than one document; a named writing move; an adult who looks at the product), not a Civil War packet, not a six-month document-based course at the kitchen table.

17–18. Claim, because, other side, check. If they want a tool to “improve” the paragraph, closed window first. The unaided rewrite is the student’s.

Try-it 6 — Job hours versus clock, then one sentence, after a shift

Time. 10 minutes after, not during.

Materials. Posted hours, a clock, the notebook.

Safety. No public quiz in front of a supervisor. No undercover audit. No gotcha against a shop. Wait in private.

The fun. Two speakers, two jobs, then ink.

The skill. Leave-this-page in ink. Fuller leave-this-page on ordinary stakes.

How to run it. After. “What do the posted hours say, and what does the clock say?” Then write the sentence. A stranger could follow it without having worked the shift.

15–16. Spoken, then one line at home.

17–18. One page: posting, clock, what would change my mind.

Talk box

Exact opening question. “Can you write that so a stranger could follow it?”

Not: “Write a five-paragraph essay.” Not: “What is the vocabulary word for a claim?”

Follow-ups.

1. What is the claim, in one sentence?
2. Because — is that evidence *that*, or a why-story?
3. How did we check?
4. What’s the strongest version of what the other side would say?
5. You may change the sentence if the look goes the other way.

How to wait. After you ask, a slow three.¹²⁹ After they stop, wait again. After

¹²⁹Robert 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. After “write the sentence,” that is task-completion time.

“write the sentence,” that is task-completion time, not a three-second wait. Look at the notebook, the box score, the graph, or the posted hours, not at the student, if the silence is hard. At fifteen to eighteen the shrug often looks like refusal. Do not rescue it. At a job, wait in private. Do not cite science-class wait-time as a homeschool trial.¹³⁰

What a stuck silence usually means. They wrote a fluent paragraph with no named source. They think length is the job. They offered a why-story in ink. They think steelman on paper means giving up. They want a chatbot to finish it. Wait-time 1 was zero. The question was a recitation item in disguise. They think “critical” means finding fault.

If they are stuck. Smaller question. “What is the claim, in one sentence?” Wait. Point at the object. Do not fill the silence with your paragraph. Do not turn the table into a fight.

Blocked, then mixed

Blocked. First sitting: one claim you already talked about, one look you can actually make, one dated line. Stay there until the parts have names.

Mixed. Then steelman on paper. Then two books. Then hours versus clock. Mix so the move is not glued to the first object. Near transfer to another recap, another pair of books, another posting is the honest hope. Far transfer to an unseen later essay about a domain they do not know is not a promise.¹³¹

One incorrect example to diagnose

A finished-looking paragraph. Five sentences. Topic sentence. “The article said the storm hit Tuesday.” No second page. No date retrieved. No author. The page looks like school.

¹³⁰Mary Budd Rowe, wait-time in elementary science class (1972/1974). Setting: science class. Not a homeschool randomized trial. Do not mash Rowe 1972 and Stahl 1994 as if they were one paper.

¹³¹Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?,” *American Educator*, Summer 2007; and Willingham, NSW occasional paper, 2019. Maxims without knowledge will not implement; near is not far. Deanna Kuhn, “How Do People Know?,” *Psychological Science* 12, no. 1 (2001): explanation of why a claim makes sense mashed with evidence that the claim is true; substantial variation remains among adults.

What it usually means. A fluent recap offered as a check. The mash of a why that makes sense — articles report storms — with evidence that this claim is true.

What to say. “Can you write that so a stranger could follow it? What’s a second place we could look?” Open a named page. If the sentence cannot survive the check, correct the sentence.

For the student

Talk is good. Ink is a different job. You have to pick a claim, pick a because, and pick a check that someone who was not at dinner could follow.

Tiny worked example.

Talk: “We dominated.”

Write: 2 September 2026. Stimulus: Tuesday’s recap plus the box score. I claim we did not dominate because they scored more and held the ball longer. We checked by lifting points and minutes from the table. Someone who disagrees would say it still felt like we ran the game.

A stranger could follow that. They could open the same table.

Try 1. One claim already on the table. Write: I claim X because Y. We checked by Z. Date it. Name what you looked at.

Try 2. Write the other side so they would nod. Then look. If the look goes the other way, change your sentence. That is not losing.

Explain it back. In your own words: what is the difference between a why-story and a check? What would a stranger still need to know?

Challenge. Take a paragraph you already wrote. Open the page it cites. Rewrite one sentence so a stranger could follow the because and the look. Do not ask a tool to write it as yours.

You are allowed to wait. You are allowed to write a short sentence. Length is not the job. The check is the job. You do not get a diploma for the page. You get Tuesday’s line.

If it isn't clicking

They write a lot and name nothing. Slow down. Three boxes on paper, then one line. You name the four parts. They fill the check. Fade the blanks. If a tool is finishing the paragraph, close the window. The unaided sentence is the student's. If they cannot yet hold one claim and one look after several sittings, stay here. Do not add a five-paragraph night.

They think steelman means giving up, or they write a straw. Hear it. "Write it so they would nod." If needed, you model two fair sentences, then they write the next two. Then look. Dual focus is promptable. It is not the default.¹³² Correct a straw without crushing the talk: "Is that a version they would sign?"

They want more essays, or a history packet, or a machine, to do the thinking. Extra writing without an interlocutor is not the intervention.¹³³ History-class trials are history class.¹³⁴ A fluent machine paragraph is performance. Return to talk

¹³²Deanna Kuhn and Amanda Crowell, "Dialogic Argumentation as a Vehicle for Developing Young Adolescents' Thinking," *Psychological Science* 22, no. 5 (2011). Full PDF opened for this book. Dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison at end of Year 2/3; extra essay writing in the comparison group did not help. Copy *shape* (a reason; a counter; a second look; sometimes the other person's strongest case; then a short written reason), not the paper's later topics. Comparison-group data show these moves do not routinely develop in this age period without the dialogic activity. The missing interlocutor has to have been in the room. Access date for sources in these notes: 2 September 2026.

¹³³Deanna Kuhn and Amanda Crowell, "Dialogic Argumentation as a Vehicle for Developing Young Adolescents' Thinking," *Psychological Science* 22, no. 5 (2011). Full PDF opened for this book. Dual-perspective on a longitudinal essay reached 79 percent experimental versus about 29 percent comparison at end of Year 2/3; extra essay writing in the comparison group did not help. Copy *shape* (a reason; a counter; a second look; sometimes the other person's strongest case; then a short written reason), not the paper's later topics. Comparison-group data show these moves do not routinely develop in this age period without the dialogic activity. The missing interlocutor has to have been in the room. Access date for sources in these notes: 2 September 2026.

¹³⁴Jeffery D. Nokes, Janice A. Dole, and Douglas J. Hacker, "Teaching High School Students to Use Heuristics While Reading Historical Texts," *Journal of Educational Psychology* 99, no. 3 (2007). Abstract opened: 128 male and 118 female, ages 16 and 17; eight classrooms; three weeks; multiple texts beat textbook on content and on sourcing/corroboation; full PDF cells as marked in the research brief. Nokes 2010 restatement: contextualization did not move. Susan De La Paz and Mark K. Felton, "Reading and Writing from Multiple Source Documents in History: Effects of Strategy Instruction with Low to Average High School Writers," *Contemporary Educational Psychology* 35, no. 3 (2010): grade 11, n = 81 instruction versus 79 control, same documents; instructed essays longer, more historically accurate, more persuasive. Susan De La Paz and colleagues, 2014: grade 8, about 0.5 SD on historical-argument writing — younger edge. Avishag Reisman, "Reading Like a Historian: A Document-Based History Curriculum Interven-

first, then one dated sentence, then a look you can actually make. If writing itself is the wall — handwriting, spelling, a freeze at the blank page — get a human who already teaches writing for the writing part. You still own the thinking question: can a stranger follow the because and the check?

Go ahead when they can write claim, because, check, and a fair other side on a known stake, and change the sentence when the look goes the other way. Stay longer when the page is still a performance. A birthday does not settle it.

Tools, including AI

Point back to the thinking-hour box. Keep this short.

After they have tried, you may ask a tool to explain this page to you from a named book page, or to give extra questions you then vet. Throw out any that import a live controversy, a pretend expert, or a civic-web item. A labelled SCRIPT after the try is for you to say — not a paragraph for them to copy as their reason, their essay, or their steelman. A hint after an attempt is not the finished reason. A diagnosis of a reason they already gave is yours to hear and decide.

You may not ask a tool to write the student’s reason, essay, or steelman, then paste that text as theirs. You may not park an unsupervised chatbot as the only partner. You may not invent an expert identity. You may not grade the page from a detector score. You may not print a certificate of thinking. You may not ask a tool to invent who started last week, whether the shop is closed, or what a page said. You may not hand them an agent as a thinking partner.

Ages 15–16. You hold the account. You are in the room. SCRIPT after the try.

Ages 17–18. You co-hold. They may type in your presence. After any tool, a closed-window paragraph. Exam terms still apply to their own submissions.¹³⁵

tion in Urban High Schools,” *Cognition and Instruction* 30, no. 1 (2012): 236 eleventh-graders, six months, quasi-experimental; significant main effects on historical thinking, transfer of those strategies to contemporary issues, factual knowledge, and reading comprehension (Stanford extract; cell means as marked in the research brief). School, professional development, documents. **Labelled history-class evidence, not a generic critical-thinking gym.** They licence the shape (more than one document; a named writing move; an adult who looks at the product), not a Civil War packet, not a six-month document-based course at the kitchen table.

¹³⁵College Board, 2026 AP Exam Terms, updated 27 April 2026, Section 4: no part of test answers, work, or submission may be generated in whole or in part using any AI tools. Some course

One crutch sentence: a tool that finishes the reason for you can make practice look better and leave the student worse when the window is closed.¹³⁶ One college-writing sentence, then stop: a university writing study warned of “metacognitive laziness.” That is college writing, not a 15–18 trial.¹³⁷ A fluent reason from a machine is performance, not the student’s check. 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 Written Reasoning I. The title a stranger can read is still **English**, or **Science**, or **History**. It is not Critical Thinking I. It is not AP Critical Thinking. That course does not exist.

Checklist before moving on.

- Talks first, then writes.
- Writes a dated sentence: claim, because, how we checked.
- Names the stimulus and the sources.
- Distinguishes a why-story from evidence *that*.
- Writes a fair other side so the other person would nod, when asked.
- Changes the sentence when the look goes the other way.
- Treats a fluent paragraph with no named source as unfinished.
- Does not treat extra essays, a history packet, or a machine paragraph as the sitting.

15–16 done enough. A spoken sentence plus one written line that names the claim and the check.

17–18 done enough. A short written reason plus the check, sometimes a two-sentence steelman, sometimes a closed-window paragraph after any tool, sometimes a job posting versus a shop review.

projects are open if cited. AP Computer Science Principles is computer science, one sentence, not a critical-thinking statute. There is no AP Critical Thinking.

¹³⁶Hamsa Bastani and colleagues, *PNAS*, 2025. Field randomized trial, nearly 1,000 Turkish high-school math students. Unguarded GPT: +48 percent on practice, then –17 percent versus never-AI on a closed-book isomorphic exam. This is this age’s math trial. One crutch sentence, not a critical-thinking coefficient.

¹³⁷Yizhou Fan and colleagues, *British Journal of Educational Technology*, 2025: 117 university students, writing task; authors warn of “metacognitive laziness.” One sentence. College writing. Not a 15–18 randomized trial. Do not promote the college paper to a coefficient.

What can still be thin: unprompted dual focus; unaided far transfer to an unseen domain; a 4,000-word paper; a national writing score. Those are not this chapter's promise. There is no window that closes at 18. A path through ordinary challenges is the promise. A diploma is not.

A parent who felt rusty should be able to say: I understand the four parts. I know what to say tomorrow. I know what a finished-looking paragraph without a named source looks like. Extra essays without me in the room are not the intervention. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can write a reason a stranger could follow. I can change my mind when we look.

Chapter 7

Inside and outside the home



Figure 15: A kitchen table with two generic packages, a paper map of three boxes, a fridge graph, a dated notebook; beside them a generic posted-hours sign and a clock

Why this matters

What is the one thing we changed?

What do you notice?

Those two questions unlock the furniture of a late-high-school life. Inside: kitchen counter, dinner table, fridge, a notebook, a sibling, a texted claim. Outside: the walk, the store, the library, the museum as looking, ordinary team or job looking. No lab coat. No circle of twenty. No Bronze-to-Gold award scheme. A kitchen is a one-change lab if the family wants it, and a claims lab if they do not. A walk you were taking anyway is a free thinking hour. Posted hours versus a clock is a look, after the shift, not a scene at work.

The short written reason from Chapter 6 can own a page. This chapter combines the places so that page has somewhere to live. Two recipes, two labels, two pans: change one thing, keep the rest the same, look. That fair test is **scientific reasoning**, labelled as such. It is not generic critical thinking in a saucepan.¹³⁸ Dinner: one question, wait. Fridge: a graph already there, or a box score. Paper map: three boxes, then the sentence. Steelman a sibling or a text, then write it. Last thoughts: “I used to think... now I think...” Changing your mind when the check goes the other way is the work. It is not losing.¹³⁹

Outside, the library is a research hour, not storytime: find two sources, name them, say what would change your mind, write the page. A museum is one object, one label, one question, one written sentence. A store is a claim on the front and a table on the side. A job or volunteer site is posted hours versus a clock, a handbook versus what they were told, a timesheet versus memory. The parent is not interrogating a supervisor and is not running an undercover audit. A team-practice claim is the game you watched, who should be captain, “always” versus last week’s list

¹³⁸Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): n = 87, ages 7–10; explicit training plus probes. The logic of unconfounded tests can be taught. Kitchen chemistry in this chapter is a picture, not a Chemistry credit, and not a science year. Martin Schwichow, Sascha Krämer, Christoph Höffler, and colleagues, meta-analysis of control-of-variables instruction, 2016: $g = 0.61$ for scientific reasoning — not a generic critical-thinking meta-analysis and not a Watson–Glaser result. Label the fair test scientific reasoning. Access date for sources in these notes: 2 September 2026.

¹³⁹Robert H. Ennis, “The Nature of Critical Thinking,” 2015 PDF, Disposition 9: take a position and change it when evidence and reasons are sufficient. “I used to think... now I think...” is that disposition made audible, not a confession ritual.

— not a culture-war about sport.

That is worth the struggle because the house already has these rooms, and the week already has these errands. Each of them can be a lecture, a gotcha, or a named move. The parent who can hear a hope offered as a look — “it will rise because we wanted it to,” “the shop is always open,” “we always start with X” — can teach this week. The student who can name the one thing that changed, or name one thing they notice and how they know, then write a sentence a stranger could follow, has practiced deciding what to believe or do on a domain they actually know.

This week you can learn one-change labelled as scientific reasoning; how a walk you were taking anyway can carry one named question; and how to leave posted hours for a clock without making a scene at work. Today the student can try two labels or two recipes, name the one thing that changed, and look — or stop on a walk, name one thing they notice, and say how they know — or after a shift, name what the posting said and what the clock said.

For the parent: understand it yourself

You do not need a lab, a museum membership, or a philosophy kit. You do need to hear two things changed when one was asked for, a hope offered as a result, and a job conversation sliding toward a gotcha.

Everyday picture. Two pans. Same batter, or two tea bags, or two folds of paper. You change the time, or the temperature, or the fold. You keep the rest the same. You look. “What is the one thing we changed?” If they changed the time *and* the amount, you do not have a fair test. You have a story about a kitchen. Label it scientific reasoning. If a thick state wants a science line, “two labels / one-change / looked” is a science line. It is not Critical Thinking Lab 1.

Precise picture. Inside and outside are the same moves on different furniture. Wait. 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’s the strongest version of theirs. Can you write that so a stranger could follow it. The place does not install the move. The named question does.

A one-change check can be taught. Younger children have been taught the logic of unconfounded tests with explicit training plus probes. A later review of scientific-

reasoning work found a moderate effect for that kind of fair-test teaching.¹⁴⁰ Direct instruction of the logic is allowed. Do not write “direct instruction wins forever.” Kitchen chemistry is a picture, not a Chemistry credit. No flame for anyone who cannot already cook. Water, ice, two labels, two recipes.

The library is a free research hour many homeschool families already use.¹⁴¹ A city library’s mission may include exploratory conversations. That is mission language, not a trial of a philosophy hour.¹⁴² At fifteen to eighteen the job is two named sources, not a picture-book circle. You still pick the prompt. If the display is a live controversy, walk to a different bay.

A walk is not an outdoor franchise. Stream and forest programmes can be lovely. They are not, in the sources opened for this book, a completed effectiveness trial of critical thinking.¹⁴³ The walk you were taking anyway is enough.

¹⁴⁰Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): n = 87, ages 7–10; explicit training plus probes. The logic of unconfounded tests can be taught. Kitchen chemistry in this chapter is a picture, not a Chemistry credit, and not a science year. Martin Schwichow, Sascha Krämer, Christoph Höffler, and colleagues, meta-analysis of control-of-variables instruction, 2016: $g = 0.61$ for scientific reasoning — not a generic critical-thinking meta-analysis and not a Watson–Glaser result. Label the fair test scientific reasoning. Access date for sources in these notes: 2 September 2026.

¹⁴¹National Center for Education Statistics, PFI 2016 (NCES 2020-001), Table 6: library as a source of curriculum and books, 66 percent overall, 58 percent at 9th–12th. Table A-5, 2023: homeschool-row library visit in the past month 53 percent; all-student 9th–12th 19 percent — a reminder to go on purpose. 2023 subject tables as marked in the research brief. New York Public Library mission language includes exploratory conversations — mission, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights — professional statement, not a trial.

¹⁴²National Center for Education Statistics, PFI 2016 (NCES 2020-001), Table 6: library as a source of curriculum and books, 66 percent overall, 58 percent at 9th–12th. Table A-5, 2023: homeschool-row library visit in the past month 53 percent; all-student 9th–12th 19 percent — a reminder to go on purpose. 2023 subject tables as marked in the research brief. New York Public Library mission language includes exploratory conversations — mission, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights — professional statement, not a trial.

¹⁴³Forest School and overnight wilderness franchises: no completed effectiveness randomized trial on critical thinking was opened for this book. This chapter takes the walk you were taking anyway.

Wrong answers you should be able to hear

1. **Two things changed.** “We used the other pan *and* more water.”

What it usually means. The fair test collapsed. The hope is about to be reported as the result.

What to say. “What is the one thing we changed? What did we keep the same?” If needed, start over with one change.

2. **A hope offered as a look.** “It will taste better because we wanted it to.” “The shop is always open.” “We always start with X.”

What it usually means. A why-story where a look was asked for.

What to say. “What did you see? What’s a second place we could look?” Then look. Then write.

3. **The job conversation as a gotcha, or the captain conversation as a culture-war.** A public quiz in front of a supervisor. A sideline interrogation. A sermon about sport.

What it usually means. Ordinary looking was inflated into an audit or a fight.

What to say. After, not during. Private. Posted hours and a clock. Last week’s list. Then stop.

4. **A nutrition sermon, or a shop lecture.** The panel becomes a moral. The clerk becomes an exam.

What it usually means. The object left the table. Body talk and aisle theatre are not this chapter.

What to say. Serving size. One number. Front versus side. Thank you. Walk on.

5. **A franchise in place of a walk, or a pin in place of a page.** An overnight identity. A Gold award. “Lab Thinking 1” on a record.

What it usually means. The place was asked to do the work of the move.

What to say. One question. One look. One dated sentence. Title still Science, or English, or History.

Five-minute parent warm-up

Before the sitting, no student in the room:

1. Pick tonight's place: dinner, two pans, a walk already planned, a library you were visiting, a shift already worked. Write one opening: "What is the one thing we changed?" or "What do you notice?"
2. Wait a slow three out loud.¹⁴⁴ Write the check you will point at: the second pan, the sky, the other book, the clock.
3. Write the sentence you will ask for at the end: claim, because, how we checked. Then stop talking sooner than feels polite, in rehearsal.

If those three are fluent, you can hear two changes, a hope, and a gotcha. That is the job. The student still looks.

How to teach it this week

Use the thinking-hour shape. Fill it with one place. Stop while it is still a sitting. You do not need all twelve try-its this week. You need one inside and one outside.

Warm-up (2–4 minutes). Yesterday's written reason, from memory. "What was the claim? How did we check?" Then: "Today the place is the lab. Same moves."

Short model (5–8 minutes). Two labels, or two pans, or — if you are already on an errand — a posted-hours sign and a clock.

¹⁴⁴Robert J. Stahl, "Using Think-Time and Wait-Time Skillfully in the Classroom," ERIC Digest ED370885 (1994). About three seconds as a convention, not a sacrament. After "write the sentence," task-completion time.



Figure 16: A generic posted-hours sign beside a clock, no shop brand, no readable UI

You change one thing, or you read one posting. You wait. You look. You say what you saw. Then you show the *wrong* cousin on purpose: two things changed, or a hope reported as a result, or a public quiz. “Is that one change? Is that a look?” Wait. Then stop talking sooner than feels polite.

Exact wording you can steal.

On a fair test: “What is the one thing we changed? What did we keep the same?”

On a walk, a museum, a store: “What do you notice? How do you know?”

After a shift: “What do the posted hours say, and what does the clock say?”

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

On a write: “Can you write that so a stranger could follow it?”

On mind-change: “I used to think... now I think... You may change your mind.”

Student attempt. After the model, they run the next pair — two recipes, or a walk noticing, or two books — with you watching. You wait. You do not grab the pan. You do not finish the notice. You do not quiz a clerk.

One good question. After the attempt: “If we had changed two things, could we tell which one mattered?” Or: “If we had only the posting, what would we still not know?”

Mixed practice. One kitchen fair test. One walk or store. One library or after-shift look. Mix so the move is not glued to tea.

Exit ticket (2–5 minutes, unaided). Name the one change, or the one notice, and how you checked. Then one dated line. Tool closed.

How to fade help. You name the one change → they name it while you keep the rest still → they run the fair test → they write the sentence without dictation. Outside: you point at the poster → they ask what it shows → they write later at the table.

When to stop talking. After one model and one question. You hold the key: one change, or one notice, a wait, a look. You do not become a lecture about variables. The word *controlled* can wait. The one thing cannot.

Age-band moves

15–16. One-change with your hands still in the setup. One notice on a walk, spoken. Two books named. After a shift, spoken hours versus clock, then one line at home. Dual focus when asked. Parent holds any tool account. Safety stays ordinary: heat, knives, roads, aisle courtesy, no public quiz.

17–18. They can name the one change before you prompt. They can refuse a two-change “test.” They can write the library page with what would change their mind. They can hold posted hours versus clock, or a posting versus a shop review, without turning it into an audit. They can steelman a teammate’s “always,” then look at last week’s list. They still report a hope as a result, some of the time. Parent co-holds. After any tool, a closed-window paragraph. Turning eighteen is not a licence to skip the look, and it is not a licence to quiz a supervisor.

Placement is by skill, not birthday. An eighteen-year-old who changes two things and reports the hope is still in the 15–16 band of this chapter. A fifteen-year-old

who names the one change, looks, and writes the check is already practicing the 17–18 grain.

Practice that actually builds learning

Named try-its. Time, materials, safety, the fun, the skill. This chapter's centre is the *places*. The written reason is the cousin that points to Chapter 6. You will not run all of these in one week. Pick one inside and one outside.

Try-it 1 — One-question dinner

Time. 3–5 minutes. Do not interrogate chewing.

Materials. Food already there.

Safety. Curious, not courtroom. No humiliation.

The fun. One actual question.

The skill. One family from the talk box. Wait.

How to run it. One question. “How do you know?” or “What do you mean, *always*?” Wait a slow three. Hear the reason. If a check is cheap — last week's list on the fridge, a box score already on the table — look. Then stop.

15–16. Spoken.

17–18. Spoken, then one dated line after the plates.

Try-it 2 — Kitchen fair test, labelled scientific reasoning

Time. 10–30 minutes.

Materials. Timer. Two pans, or two folds of paper, or two recipes already in the house. Water, ice, two labels. No kit required.

Safety. Heat, knives, floor wet. No flame for anyone who cannot already cook. No tasting unknown things. No body talk. No food sermon.

The fun. Racing two versions.

The skill. One change; keep the rest the same; look. Scientific reasoning, not generic critical thinking.¹⁴⁵

How to run it. Opening question: “What is the one thing we changed?” Write it down before you start. Run both. Look. Last thoughts: “I used to think... now I think...” Then a dated sentence. If a log needs a science line, this is a science line. It is not Lab Thinking 1.

15–16. You keep the rest still. They name the one change.

17–18. They set the one change. They reject a two-change run. They write the check.

Try-it 3 — Two-recipe / two-label

Time. 5–15 minutes.

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

Safety. No food-shaming. No body talk.

The fun. “Serves four” versus the tin.

The skill. Two-source. Claim versus table.

How to run it. Read the claim. Turn the package. “What does this table actually show?” One number. One missing piece.

15–16. Serving size and one number.

17–18. Front versus side, then a sentence.

Try-it 4 — Graph on the fridge / homework

Time. 5–10 minutes.

¹⁴⁵Zhe Chen and David Klahr, “All Other Things Being Equal: Acquisition and Transfer of the Control of Variables Strategy,” *Child Development* 70, no. 5 (1999): n = 87, ages 7–10; explicit training plus probes. The logic of unconfounded tests can be taught. Kitchen chemistry in this chapter is a picture, not a Chemistry credit, and not a science year. Martin Schwichow, Sascha Krämer, Christoph Höffler, and colleagues, meta-analysis of control-of-variables instruction, 2016: $g = 0.61$ for scientific reasoning — not a generic critical-thinking meta-analysis and not a Watson–Glaser result. Label the fair test scientific reasoning. Access date for sources in these notes: 2 September 2026.

Materials. Weather strip, box score, assigned graph.

Safety. Do not do the homework for them.

The fun. One graph question plus one written sentence.

The skill. Pointer to Chapter 5. Title, axis, units, what is missing.

How to run it. “What does this graph actually show?” Wait. Then write.

Try-it 5 — Paper argument map, then the sentence

Time. 8–15 minutes.

Materials. Scrap paper. Three boxes: Claim / Reason / Objection. Dated notebook.

Safety. Paper before any app.

The fun. Filling boxes.

The skill. Pointer to Chapter 6. Then a stranger-readable line.

How to run it. Fill the boxes from talk already had. Write the sentence underneath.

Try-it 6 — Steelman a sibling / a text, then write it

Time. 5–15 minutes.

Materials. The disputed claim. Dated notebook.

Safety. No audience of neighbours. No humiliation.

The fun. Saying it so they would nod, then writing it.

The skill. Dual-perspective. Then check.

How to run it. “Say theirs so they would nod. Now write that version. What’s a second place we could look?”

15–16. Two sentences, out loud if needed.

17–18. Two sentences plus the check.

Try-it 7 — Walk noticing + forecast check

Time. 5–20 minutes of a walk you were taking anyway.

Materials. Eyes. Optional forecast already on a phone or a page.

Safety. Roads, water, unknown plants, other people's dogs. Ordinary looking. Not foraging school. Not an overnight franchise. Not a climate-policy seminar.

The fun. Stopping.

The skill. Two-source: forecast versus sky. "What do you notice? How do you know?"

How to run it. Stop once. Name one thing. Compare to the forecast if you have one. Write later if you want the page.

15–16. One notice, spoken.

17–18. Notice, forecast, sky, one sentence.

Try-it 8 — Store-label looking

Time. 3–8 minutes in a shop you were already in.

Materials. One or two packages. Optional posted policy.

Safety. Aisle courtesy. No lecture to strangers. No body talk. No trapping the clerk. No shoplifting a "test."

The fun. Turning the box.

The skill. Claim versus table. Two-source.

How to run it. "What do you notice?" Front, then side. Thank you. Walk on. Write later.

Try-it 9 — Library two-book

Time. 10–20 minutes.

Materials. Two books on one safe topic. Call numbers. Dated notebook.

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

The fun. Two blurbs that do not quite match.

The skill. Two-source; steelman the blurb; written reason plus check. In-home cousin: the same two books on the table tomorrow, plus a one-page reason.

How to run it. Find two. Name them. Where do they agree? What would change your mind? Write the page.

15–16. Two titles and one sentence.

17–18. Two titles, agreement, disagreement, what would change my mind, the page. This is research, not storytime.¹⁴⁶

Try-it 10 — Museum as looking

Time. 10–20 minutes at **one** object.

Materials. The object and its label. Optional second plaque.

Safety. Hands off. Crowd. Fatigue. One object, then sit.

The fun. The thing itself.

The skill. Label as a claim. Leave-this-page to a second source if one is in the room. One written sentence.

How to run it. “What do you notice? What does the label claim? How could we check?” Do not franchise the visit. Do not lecture another family’s child in front of the case.

15–16. One object, one label, spoken.

17–18. One object, label, second plaque or later named page, a sentence.

Try-it 11 — Job / volunteer ordinary looking

Time. 3–10 minutes after, not during.

¹⁴⁶National Center for Education Statistics, PFI 2016 (NCES 2020-001), Table 6: library as a source of curriculum and books, 66 percent overall, 58 percent at 9th–12th. Table A-5, 2023: homeschool-row library visit in the past month 53 percent; all-student 9th–12th 19 percent — a reminder to go on purpose. 2023 subject tables as marked in the research brief. New York Public Library mission language includes exploratory conversations — mission, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights — professional statement, not a trial.

Materials. Posted hours, handbook, timesheet.

Safety. No public quiz in front of a supervisor. No undercover audit. No gotcha. Wait in private.

The fun. Two speakers, two jobs.

The skill. Leave-this-page. Two-source. Written reason plus check.

How to run it. After. “What do the posted hours say, and what does the clock say?” Or: “What did the handbook say, and what were you told?” Then write. A stranger could follow it without having worked the shift.

15–16. Spoken, then one line at home.

17–18. Posting versus review, or hours versus clock, on the page. Still not an audit.

Try-it 12 — Team-practice claim, after not during

Time. 3–10 minutes.

Materials. Box score or memory of *this* game. Last week’s actual starting five, written down.

Safety. No sideline interrogation. No humiliation of a player. No culture-war about sport.

The fun. “Always?” versus last week’s list. Who should be captain under named criteria.

The skill. Steelman. Counterexample to “always.” Then write.

How to run it. After. “What do you mean, *always*? What’s a second place we could look?” The list, not a sermon.

Try-it 13 — Bus / waiting two-source

Time. 2–5 minutes.

Materials. A posted time versus the clock.

Safety. Public quiet.

The skill. Claim versus look.

How to run it. “What do you notice? What does the poster say, and what does the clock say?” Then wait for the bus.

Talk box

Exact opening question. “What is the one thing we changed?” (fair test) or “What do you notice?” (walk / museum / store) or, after a shift, “What do the posted hours say, and what does the clock say?”

Not: “Define a controlled variable.” Not: “Did you have fun?”

Follow-ups.

1. What did we keep the same? (or: What do you mean by that notice?)
2. What did you see? How do you know?
3. What’s a second place we could look?
4. What would count against that?
5. Can you write that so a stranger could follow it? You may change your mind.

How to wait. After you ask, a slow three.¹⁴⁷ After they stop, wait again. Look at the pans, the window, the label, or the posted hours, not at the student, if the silence is hard. After “write the sentence,” that is task-completion time. At a job, wait in private. Do not cite science-class wait-time as a homeschool trial.¹⁴⁸

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. They think a job conversation is a gotcha. They think a captain conversation is a culture-war. Wait-time 1 was zero. They think “critical” means finding fault.

If they are stuck. Smaller question. “What is the one thing we changed?” Point at the object. Do not fill the silence with the right variable. Do not turn the aisle into a fight.

¹⁴⁷Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). About three seconds as a convention, not a sacrament. After “write the sentence,” task-completion time.

¹⁴⁸Mary Budd Rowe, wait-time in elementary science class (1972/1974). Setting: science class. Not a homeschool randomized trial. Do not mash Rowe 1972 and Stahl 1994 as if they were one paper.

Blocked, then mixed

Blocked. First sitting: two pans or two labels, one change, look. Or one walk, one notice. Stay there until the one thing has a name.

Mixed. Then library. Then after a shift. Then a team claim after, not during. Mix so the move is not glued to tea. Near transfer to another kitchen check, another poster, another pair of books is the honest hope. Far transfer is not a promise.¹⁴⁹

One incorrect example to diagnose

Two pans. They changed the time *and* the amount. They report, fluently, “the longer one rose because we wanted it more.” The sentence looks like a conclusion.

What it usually means. Two changes. A hope offered as a look. How mashed with why.

What to say. “What is the one thing we changed? What did you see?” Start over. One change. Then write. If the sentence cannot survive the look, correct the sentence.

For the student

The kitchen is a lab if you treat it like one. The walk is a look if you stop once. The library is research if you name two sources. A job is not a mystery to audit. It is posted hours and a clock, after, in private.

Tiny worked example.

One change: two tea bags, same water, different steep times. What is the one thing we changed? Time. What did we keep the same? Water, bag, cup. What did we see? Colour. Write: I claim the longer steep is darker because we changed only time. We checked by looking at both cups.

One notice: a library poster. Hours until 8. Clock says 7:50. Write: I claim the library is still in its posted Tuesday hours because the sign lists 10–8 and the lobby clock says 7:50. We checked by reading the sign and the clock on this date.

¹⁴⁹Daniel T. Willingham, *American Educator*, Summer 2007; NSW occasional paper, 2019. Maxims without knowledge will not implement; near is not far.

Try 1. Two labels or two recipes. Name the one thing that will change. Keep the rest still. Look.

Try 2. On a walk, or at a poster, or after a shift: what do you notice? How do you know? What's a second place we could look?

Explain it back. In your own words: why does changing two things spoil the look? Why is a public quiz at work the wrong sitting?

Challenge. Write one dated sentence from tonight's place so a stranger who was not in the kitchen, or not on the walk, or not at the shift, could follow it.

You are allowed to wait. You are allowed to start the test over. You are not required to lecture a clerk. You are required to look.

If it isn't clicking

They change two things, or they report the hope. Slow down. Write the one change on a sticky before you start. You keep the rest still. Fade that. If they still mash how and why, ask the two questions separately: "What did you see?" Then, later: "Why might that be?" Those are different jobs.¹⁵⁰

The sitting becomes a gotcha — at a shop, a job, a sideline. Stop. Postpone. Pick a cooler object: two labels at home, a rainfall graph, two books. Ordinary looking is not an audit. If they think steelman means giving up, return to Chapter 6's two sentences on paper, then look.

Outside never happens, or it becomes a franchise. A walk you were taking anyway is enough. A library card is enough.¹⁵¹ You do not need an overnight identity to practice noticing. If the student cannot yet hold one change and one look after several kitchen sittings, stay in the kitchen. Get a human who already

¹⁵⁰Deanna Kuhn, "How Do People Know?," *Psychological Science* 12, no. 1 (2001): explanation of why a claim makes sense mashed with evidence that the claim is true. Ask "What did you see?" and "Why might that be?" as two questions.

¹⁵¹National Center for Education Statistics, PFI 2016 (NCES 2020-001), Table 6: library as a source of curriculum and books, 66 percent overall, 58 percent at 9th–12th. Table A-5, 2023: homeschool-row library visit in the past month 53 percent; all-student 9th–12th 19 percent — a reminder to go on purpose. 2023 subject tables as marked in the research brief. New York Public Library mission language includes exploratory conversations — mission, not a Philosophy for Children randomized trial. American Library Association, Library Bill of Rights — professional statement, not a trial.

teaches science for the fair-test part if the logic of one-change is the wall. You still own the thinking question: what is the one thing we changed, and what did we see?

Go ahead when they can name the one change, or the one notice, look, and write a stranger-readable line. Stay longer when two things still change, or when the job talk is still a scene. A birthday does not settle it.

Tools, including AI

Point back to the thinking-hour box. Keep this short.

After they have tried, you may ask a tool to explain this page to you from a named book page, or to give extra questions you then vet. Throw out any that import a live controversy, a pretend expert, a civic-web item, or a gotcha script for a workplace. A labelled SCRIPT after the try is for you to say, not a paragraph for them to copy. A hint after an attempt is not the finished reason.

You may not ask a tool to invent whether the shop is closed, what the rainfall numbers were, or what a handbook requires. You may not park an unsupervised chatbot as the only partner. You may not paste a machine's steelman as theirs. You may not hand them an agent as a thinking partner. You may not print a certificate of thinking.

Ages 15–16. You hold the account. You are in the room.

Ages 17–18. You co-hold. After any tool, a closed-window paragraph.

A tool that finishes the reason can make practice look better and leave the student worse when the window is closed.¹⁵² A thinking tool is not a secret friend. Keep accounts where you can open them.

¹⁵²Hamsa Bastani and colleagues, *PNAS*, 2025. High-school math field trial: unguarded chatbot, practice looked better, unaided exam worse. This age's math trial. One crutch sentence. Education Endowment Foundation / NFER, Philosophy for Children effectiveness trial, 2021: 198 schools, 5/5 padlock, **0 months** extra progress on reading and maths, labelled Key Stage 2 / Year 6 $\approx$ age 10–11, **not this band's trial**. Implementation: 35 of 75 intervention schools not at expected implementation — a load finding, labelled KS2. Average cost on that page: £13.50 per pupil per year averaged over three years. A library card is the opened low-cost path. Copy **0 months** whenever a branded Philosophy for Children hour is named; this chapter's walk and kitchen are not that hour.

What “done enough” looks like

Done enough is skill, not a birthday, and not a course called Lab Thinking 1 or Outdoor Philosophy 1. 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**, or **English**, or **History**. It is not Critical Thinking I.

Checklist before moving on.

- Names the one thing that changed, and what was kept the same.
- Distinguishes what they saw from why it might have happened.
- Notices on a walk, at a poster, or at a museum object, and says how they know.
- Uses two library books as two sources, named.
- Leaves posted hours for a clock, after, in private — not as an audit.
- Steelmans a teammate’s “always,” then looks at last week’s list.
- Writes one dated sentence a stranger could follow from tonight’s place.
- Changes the sentence when the look goes the other way.

15–16 done enough. Spoken one-change or one notice, plus one written line.

17–18 done enough. They set the one change; they write the library page; they hold hours versus clock without a scene.

What can still be thin: unaided far transfer; a Chemistry credit from tea; a philosophy kit from a library hour. Those are not this chapter’s promise. A path through ordinary challenges is the promise. A diploma is not.

A parent who felt rusty should be able to say: I understand one-change as scientific reasoning. I know what to say on a walk. I know how to leave posted hours for a clock without making a scene. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can name the one thing we changed. I can write a reason a stranger could follow.

Chapter 8

Approaching disagreement

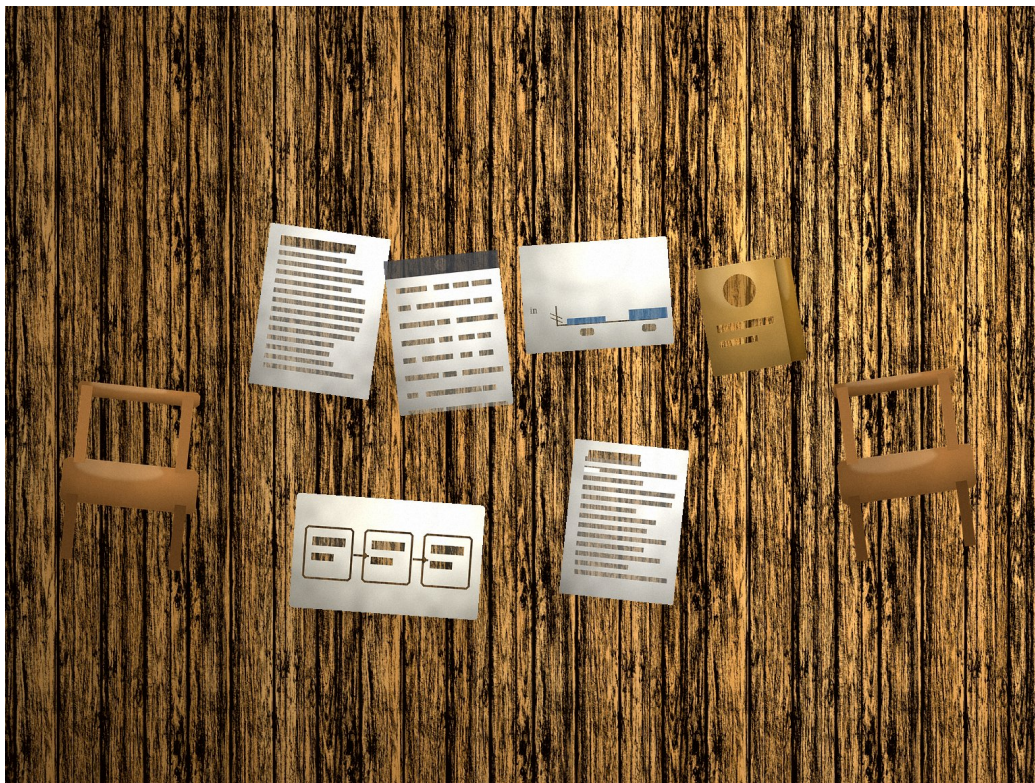


Figure 17: Two empty chairs at a kitchen table, a recap page and a box score with unreadable league marks, a rainfall graph, a generic box with a blank “best” badge, a short essay beside a named page

Why this matters

Say yours, then say theirs.

That sentence unlocks disagreement at fifteen to eighteen. 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,” a claim in a short essay, a job posting versus a shop review. 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. Then you write the check so a stranger could follow it.

An older book’s civic chapters are the wrong grain for this table.¹⁵³ A five-to-ten swing is the wrong object. An eleven-to-fifteen captain week is the right *shape* and the wrong *ceiling*. 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.¹⁵⁴ Copy the *shape* of classroom argumentation: a counter, evidence, a fair version of the other side. Copy not the topics those class-

¹⁵³Sam Wineburg and Sarah McGrew, 2019, lateral reading as an adult fact-checker habit. Joel Breakstone, Sarah McGrew, Teresa Ortega, Mark Smith, and Sam Wineburg, *Educational Researcher*, 2021: 3,446 high-school students; 96 percent never learned a climate site’s fossil-fuel ties — **this age’s research population**, and *why the habit is taught*. **Do not assign the items.** Wineburg and colleagues, 2022: six ~50-minute Civic Online Reasoning lessons in a high-school government course — why not a lesson bank. Stanford GSE “doubled / half the points” is journalism. One sentence in the teaching voice of this book, earlier chapters: high-school students who stay on a finished-looking page miss who is behind it — that is why we practice leaving a recap, a spec sheet, a storm page, an essay-claim, and posted hours now. This chapter does not print those trial items and does not run those six lessons as the week.

¹⁵⁴Michael Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): teens produce argumentative discourse and are more own-side, less strategic than young adults from the same population. Lab topic of that study is not a book exercise. Deanna Kuhn and Wadiya Udell, *Child Development* 74, no. 5 (2003) and *Thinking & Reasoning* 13, no. 2 (2007): dual focus is promptable, not default; young adolescents can address an opposing position when explicitly asked. Deanna Kuhn and Amanda Crowell, *Psychological Science* 22, no. 5 (2011): dual-perspective 79 percent experimental versus about 29 percent comparison; extra essay writing did not help; copy *shape* (counter, evidence, steelman), not topics. Keith E. Stanovich, Richard F. West, and Maggie E. Toplak, “Myside Bias, Rational Thinking, and Intelligence,” *Current Directions in Psychological Science* 22, no. 4 (2013): myside bias shows very little relation to intelligence, including in university samples. Access date for sources in these notes: 2 September 2026.

rooms sometimes used. This chapter stays with ordinary late-high-school stakes.

Talk can change the talk in the room without transferring to a new essay about an unseen story.¹⁵⁵ A large English effectiveness trial of Philosophy for Children — 198 schools, highest security rating — found **0 months** extra progress on reading and maths, and no significant move on pupil-survey items about explaining ideas and working with different opinions.¹⁵⁶ That trial was Key Stage 2 / Year 6, about age 10–11, **not this band’s trial**. Dialogue may still be worth ten minutes as dialogue. It is not a proven engine of generic thinking or of late-high-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. Essay-claim translation: if a short essay repeats “the article said,” repeating the article’s verb is the rumor. Repeating the second named page is the check. Snack-box translation: if a box says *best* and someone repeats *best*, repeating *best* to knock it down practices the rumor. Repeating the spec sheet is the check. That is a translation of a handbook about correction, using a sports claim, a snack claim, or an essay claim. It is not a trial of fifteen- to eighteen-year-olds, and it is not a licence to hunt liars as the weekly object.¹⁵⁷

¹⁵⁵Alina Reznitskaya and colleagues, “Examining Transfer Effects from Dialogic Discussions to New Tasks and Contexts,” *Contemporary Educational Psychology* 37, no. 3 (2012): 12 fifth-grade classrooms; more dialogic talk; no statistically significant transfer to interview, persuasive essay, or recall. Grade 5 is younger. Dialogue may still be worth ten minutes as dialogue. It is not a proven engine of generic critical thinking for late high school.

¹⁵⁶Palak 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 (ES −0.06) and working with different opinions (ES 0.13, $p = 0.07$): 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 — **not this band’s trial**. Whenever Philosophy for Children is named in this book, copy **0 months**, labelled KS2. Stephen Gorard, Nadia Siddiqui, and Beng Huat See, EEF Philosophy for Children efficacy trial, 2015, ERIC ED581147: reading +0.12 / maths +0.10 — the efficacy trial that did not replicate at effectiveness scale.

¹⁵⁷Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook* 2020. Backfire effects occur only occasionally; continued influence is the sticky problem;

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. A finished-looking paragraph. Posted hours versus a clock. A posting versus a review. 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, look at one other thing, and write the check 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, a recap, an essay-claim, or posted hours, 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, look at one other thing — the box score, the list, the spec sheet, the axis, the named page, the clock — and write the check.

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, “the recap said dominated” as a sentence that still has a table, and “the essay is done” as a paragraph that still has a named page.

Everyday picture. Two people, one captain’s armband, or one remote, or one Saturday shift. 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: the recap, two forecasts, the rainfall picture, a paragraph about a storm.

detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.



Figure 18: Two empty chairs facing each other across a table, a scrap of paper with three boxes, no people

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. Then **write the check**: I claim X because Y. We checked by Z. Someone who disagrees would say... 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.¹⁵⁸ 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*; a job posting is not a shop review — is not the same as “anything goes.”¹⁵⁹ 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.

Intelligence does not cancel own-side preference. University samples still show it. Turning eighteen is not a thinking birthday.¹⁶⁰ If a real family disagreement is too hot for the table today, pick the recap, the two forecasts, the rainfall picture, the essay-claim, or the job posting. Practice the moves. A later, heavier claim will need knowledge this sitting does not have. That is a fact about knowledge, not a dodge.¹⁶¹

¹⁵⁸Neil Mercer and colleagues, classroom ground rules (we listen; we give reasons; we ask; we can change our minds), ages 9–10 classroom cousin. A family can post four lines on a fridge. Posting is not practice.

¹⁵⁹Matthew Lipman, “Critical Thinking—What Can It Be?,” *Educational Leadership* 46, no. 1 (1988): criteria, self-correction, context. Sensitivity to context is not “anything goes.” Ian Wilkinson, Alina Reznitskaya, and colleagues: you can train talk moves and still leave the adult believing that reasons do not rank — take that seriously.

¹⁶⁰Michael Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): teens produce argumentative discourse and are more own-side, less strategic than young adults from the same population. Lab topic of that study is not a book exercise. Deanna Kuhn and Wadiya Udell, *Child Development* 74, no. 5 (2003) and *Thinking & Reasoning* 13, no. 2 (2007): dual focus is promptable, not default; young adolescents can address an opposing position when explicitly asked. Deanna Kuhn and Amanda Crowell, *Psychological Science* 22, no. 5 (2011): dual-perspective 79 percent experimental versus about 29 percent comparison; extra essay writing did not help; copy *shape* (counter, evidence, steelman), not topics. Keith E. Stanovich, Richard F. West, and Maggie E. Toplak, “Myside Bias, Rational Thinking, and Intelligence,” *Current Directions in Psychological Science* 22, no. 4 (2013): myside bias shows very little relation to intelligence, including in university samples. Access date for sources in these notes: 2 September 2026.

¹⁶¹Daniel T. Willingham, *American Educator*, Summer 2007; NSW occasional paper, 2019. Maxims without knowledge will not implement; sequence and revisit; near is not far. A later, heavier claim will need that later domain’s knowledge. This book teaches the moves and does not rehearse the later domain as content.

Wrong answers you should be able to hear

1. Listening means giving up the starting spot. “If I let them talk, they get captain.” Or: “If I steelman the posting, I have to take the job.”

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, or the clock. 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.” “Because the essay is done.” “Because the posting looks official.”

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. Then: “Can you write the check so a stranger could follow it?” 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*? What do you mean, *the article said*? What do you mean, *qualified*?” 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. Or repeating “the article said” as the thing to kill, instead of opening the second page.

What it usually means. The sticky sentence got practiced. The check did not.¹⁶²

¹⁶²Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

What to say. Repeat the check: the box score, the list, the spec sheet, the axis, the other forecast, the named page, the clock. Lead with what you looked at.

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. Or a finished-looking essay offered as the verdict.

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. Length was heard as a look.

What to say. Stop. Point at the recap and the table, the two forecasts, the rainfall picture, the named page, or the posting and the review. 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 $\neq$ check; steelman; a graph can mislead by scale; then write the check. 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.¹⁶³
3. Write one fluent fake you expect — “because it’s fair,” “the recap said dominated,” “we always,” “looks huge,” “the article said,” “the posting looks official” — and the check you will point at: last week’s jobs, box score, list, spec sheet, other forecast, axis from zero, named page, clock.

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*, a rainfall picture, an essay-claim, or a posting

¹⁶³Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). About three seconds as a convention, not a sacrament.

versus a review. 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 ours, then theirs, and look at one other thing.”

Short model (5–8 minutes). Two empty chairs. A recap that uses *dominated* and a box score, or two forecasts and a window, or a paragraph and a named page. 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. You write the check. Then you show the *wrong* cousin on purpose: a fluent “the recap said dominated” with no table, or a straw instead of a steelman, or a finished paragraph with no named source. “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*? What do you mean, *the article said*? What do you mean, *qualified*?”

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 $\neq$ check: “I hear a finished sentence. Let’s look.”

On steelman: “Say theirs so they would nod. Then we still look.”

On a graph: “Where does this picture start? ‘Looks huge’ is a caption.”

On writing: “Can you write the check so a stranger could follow it?”

Student attempt. After the model, they run the next pair — captain criteria versus last week’s jobs, or a review versus a spec, or an essay-claim versus a named page — with you watching. You wait. You do not supply their meaning. You do not finish their steelman. You do not paste a machine’s other side as theirs.

One good question. After the attempt: “If we had only your first sentence, what would a stranger still not know?” The student generates the why.

Mixed practice. One sports claim. One forecast pair. One essay-claim. One posting versus review. Mix so the sequence is not glued to captain.

Exit ticket (5–10 minutes, unaided). Say yours. Say theirs so they would nod. Name the look. Write the check. Tool closed.

How to fade help. You name the whole sequence → they listen and steelman while you point at the object → they run listen, meaning, reason, look → they write the check without dictation. When they can say “that’s a starting point, not a check” of their own fluent sentence, put the scrap-sequence away. Bring it back when a hotter claim arrives. If it is too hot, postpone.

When to stop talking. After one model and one question. You hold the key: did they listen, name a meaning, offer a look, wait? You do not become a lecture about disagreement. The sequence can wait to be complete. The listen cannot.

Age-band moves

15–16. Prompted dual focus plus one written line is the win for the week. Steelman two sentences, out loud if needed, then on paper. They will still treat listening as losing, some of the time. Hear it. Ask for theirs so the other person would nod. Then look. Look still outruns meaning on a finished-looking page, often.¹⁶⁴ Parent holds any tool account. The unaided steelman is the student’s. Do not skip the prompt because they can already argue with a sibling.

17–18. Same moves, slightly heavier grain. Holding dual focus with less prompting. Noticing a fluent caption or a finished-looking paragraph in place of a look. Treating “just an opinion” as a claim to be examined rather than a truce. A job posting versus a shop review as a weekly object. A closed-window paragraph af-

¹⁶⁴Sarah J. Brown and Michaela Gummerum, 2025 WRAP PDF: 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; appearance often dominated. Fifteen sits in the younger cell; 17–18 in the older cell. Stimuli in that paper 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, an essay-claim, a job posting versus a shop review. Paul Harris and colleagues / Einav: children and adolescents already weigh speakers; next move is reason plus second source, not “trust no one.”

ter any tool. They still prefer their own side. University samples still do.¹⁶⁵ They still need the object. Parent co-holds. Turning eighteen is not a thinking birthday, and it is not a licence to skip practice.

Placement is by skill, not birthday. An eighteen-year-old who cannot yet hold a two-sentence steelman and a look is still in the 15–16 band of this chapter. A fifteen-year-old who can listen, steelman, look, and write the check is already practicing the 17–18 grain. A publisher’s “grade 11 critical thinking workbook” is a scope, 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. 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 (start? speak to the referee? organize?). Last week’s actual jobs, written down.

Safety. No humiliation. If it is too hot, postpone. Practice on a cooler claim.

The fun. Being heard.

The skill. Listen; meaning of *captain*; steelman; check against last week’s jobs; write the reason.

¹⁶⁵Michael Felton and Deanna Kuhn, “The Development of Argumentative Discourse Skill,” *Discourse Processes* 32, no. 2–3 (2001): teens produce argumentative discourse and are more own-side, less strategic than young adults from the same population. Lab topic of that study is not a book exercise. Deanna Kuhn and Wadiya Udell, *Child Development* 74, no. 5 (2003) and *Thinking & Reasoning* 13, no. 2 (2007): dual focus is promptable, not default; young adolescents can address an opposing position when explicitly asked. Deanna Kuhn and Amanda Crowell, *Psychological Science* 22, no. 5 (2011): dual-perspective 79 percent experimental versus about 29 percent comparison; extra essay writing did not help; copy *shape* (counter, evidence, steelman), not topics. Keith E. Stanovich, Richard F. West, and Maggie E. Toplak, “Myside Bias, Rational Thinking, and Intelligence,” *Current Directions in Psychological Science* 22, no. 4 (2013): myside bias shows very little relation to intelligence, including in university samples. Access date for sources in these notes: 2 September 2026.

How to run it. “Say yours, then say theirs.” Wait. “What do you mean, *captain*?” Look at last week’s jobs. Write the check.

15–16. Spoken steelman plus one line.

17–18. Two-sentence steelman, one point of agreement, the list, the page.

Try-it 2 — Recap “dominated,” kitchen or after a game

Time. 5–15 minutes. After, not during. No sideline interrogation.

Materials. Recap plus box score.

Safety. No humiliation of a player.

The fun. Catching the verb against the numbers.

The skill. Meaning of *dominated*; who’s behind the word; other source; fluent “the recap said dominated” is not a check. Repeat the check, not the rumor.¹⁶⁶

How to run it. Hear *dominated*. Do not repeat *dominated* as a chant to knock down. Open the table. Write what the table showed.

15–16. One number versus the verb.

17–18. Two numbers, a missing piece, the sentence.

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.

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

The fun. Being right or changing your mind.

The skill. Two sources; wait; mind-change; write the check.

¹⁶⁶Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

How to run it. “Say yours, then say theirs” — the two pages as two speakers. Then the window. You may change your mind.

15–16. Two pages, then the sky, spoken.

17–18. Two pages, agreement, disagreement, the sky, the sentence.

Try-it 4 — Review versus spec sheet

Time. 5–15 minutes.

Materials. A product already in the house, or two packages at a store you were already in.

Safety. Aisle courtesy. No body talk. No food sermon. No trapping a clerk.

The fun. “Best” versus listed capacity.

The skill. “Best” is often the reviewer’s word; capacity is the sheet’s. Repeat the spec, not a singsong of *best*.¹⁶⁷

How to run it. Read the review’s word. Turn to the sheet. Write both.

15–16. One word versus one number.

17–18. Both speakers named, then the sentence.

Try-it 5 — Teammate “we always start with X,” after practice

Time. 3–10 minutes. After, not during.

Materials. Last week’s written starting five.

Safety. No sideline interrogation. No humiliation. No culture-war about sport.

The fun. “Always?” versus last week’s list.

¹⁶⁷Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

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.¹⁶⁸

How to run it. “Say yours, then say theirs.” Steelman the teammate. Open the list.

15–16. One counterexample, spoken.

17–18. Steelman, list, sentence.

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. Ordinary paper. No climate-as-policy sitting. Two months are two months.

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. “Say yours” — huge. “Say theirs” — the numbers. Redraw from zero. Write the check.

Try-it 7 — A claim in a short essay

Time. 8–15 minutes.

Materials. A paragraph plus the named page, opened.

Safety. Not a humiliation of the writer. Skip live-news-cycle pages.

The fun. Catching a finished-looking sentence that has no check.

¹⁶⁸Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

The skill. A finished-looking sentence is not a check; steelman the claim; leave the page; rewrite. If the essay repeats “the article said,” repeat the second named page, not the article’s verb.¹⁶⁹

How to run it. “Say yours, then say theirs” — the paragraph as one speaker, the named page as the other. Rewrite so a stranger could follow it.

15–16. One claim, one look, one rewrite.

17–18. Claim, because, other side, check. Closed window if a tool was used.

Try-it 8 — Job posting versus shop review / posted hours versus clock

Time. 5–15 minutes after, not during.

Materials. A posting and a review of the same place, or hours and a clock.

Safety. No public quiz. No undercover audit. No gotcha against a shop or a supervisor. Wait in private.

The fun. Two speakers, two jobs.

The skill. They are not the same kind of speech. Leave this page. Write the check.

How to run it. “Say yours, then say theirs.” The posting lists requirements. The review narrates a visit. Steelman each. Then look at what each can actually show. After a shift: posted hours versus clock.

15–16. Spoken, then one line at home.

17–18. Both speakers named, what each can show, the page. Still not an audit.

Try-it 9 — Kitchen cousin: steelman a sibling / a text, then write it

Time. 5–15 minutes.

¹⁶⁹Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

Materials. The disputed claim. Dated notebook.

Safety. No audience of neighbours. No humiliation. If it is too hot, postpone.

The fun. Saying it so they would nod, then writing it.

The skill. Say theirs so they would nod; write that version; then check.

How to run it. Two chairs, empty of performance. “Say yours, then say theirs.” Write. Look.

Talk box

Exact opening question. “Say yours, then say theirs.”

Not: “Who is right?” Not: “What is the vocabulary word for steelman?”

Follow-ups.

1. What do you mean, *captain*? (or *dominated*, *always*, *the article said*, *qualified*)
2. How do you know?
3. What’s a second place we could look?
4. What’s the strongest version of what they mean?
5. Can you write the check so a stranger could follow it? You may change your mind; that is not losing.

How to wait. After you ask, a slow three.¹⁷⁰ After they stop, wait again. If they are mid-reason, do not cut them off. Look at the box score, the graph, the window, the named page, or the posted hours, not at the student, if the silence is hard. After “write the sentence,” that is task-completion time. At fifteen to eighteen the shrug often looks like refusal. Do not rescue it. At a job, wait in private. Do not cite science-class wait-time as a homeschool trial.¹⁷¹

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. They

¹⁷⁰Robert J. Stahl, “Using Think-Time and Wait-Time Skillfully in the Classroom,” ERIC Digest ED370885 (1994). About three seconds as a convention, not a sacrament.

¹⁷¹Mary Budd Rowe, wait-time in elementary science class (1972/1974). Setting: science class. Not a homeschool randomized trial. Do not mash Rowe 1972 and Stahl 1994 as if they were one paper.

think a finished essay is already the verdict. They offered a why-story where a look was asked for. Wait-time 1 was zero. They think “critical” means finding fault.

If they are stuck. Smaller question. “What do you mean by that word?” Wait. Point at the object. Do not fill the silence with your steelman. If the sitting becomes a fight, stop, postpone, pick a smaller claim.

Blocked, then mixed

Blocked. First sitting: one cooler claim — recap versus box score, or two forecasts, or rainfall. Listen, meaning, look. Stay there until theirs can be said so they would nod.

Mixed. Then captain. Then essay-claim. Then posting versus review. Mix so the sequence is not glued to sport. Near transfer to another recap, another paragraph, another posting is the honest hope. Far transfer to a later, heavier domain is not a promise.¹⁷²

One incorrect example to diagnose

A finished-looking paragraph about a match. Topic sentence. “We dominated, as the recap made clear.” No box score. When asked for the other side, the student writes, “They would just be biased.” Volume at dinner to match.

What it usually means. A fluent sentence offered as a check. A straw offered as a steelman. A fight offered as a sequence.

What to say. “Say yours, then say theirs — so they would nod.” Open the table. “Can you write the check so a stranger could follow it?” If the sentence cannot survive the look, correct the sentence. Repeat the table, not a singsong of *dominated*.

For the student

You do not have to win. You have to listen, then ask, then look, then write.

¹⁷²Daniel T. Willingham, *American Educator*, Summer 2007; NSW occasional paper, 2019. Maxims without knowledge will not implement; sequence and revisit; near is not far. A later, heavier claim will need that later domain’s knowledge. This book teaches the moves and does not rehearse the later domain as content.

Tiny worked example.

Yours: “We should pick Sam as captain. Sam is fair.”

Theirs, so they would nod: “Alex should be captain because Alex organized last week and spoke to the referee.”

Look: last week’s jobs, written down. Alex did organize. Sam did speak to the referee once.

Write: I claim the captain pick should weigh who organized last week because that is a job the team actually needed. We checked by listing last week’s jobs. Someone who disagrees would say speaking to the referee matters more; that is a fair point, and the list still shows who organized.

A stranger could follow that. They could look at the same list.

Try 1. Let the other person finish. Say theirs so they would nod. Do not make their claim stupider than it is.

Try 2. Leave this page. Look at one other thing: the box score, the list, the spec sheet, the axis, the named page, the clock. Write the check. If the look goes the other way, change the sentence. That is not losing.

Explain it back. In your own words: why is a fluent sentence not a check? Why is repeating *dominated* or *best* or “the article said” the rumor, and the table or the spec or the second page the check?

Challenge. Take a paragraph you already wrote. Steelman the other side in two sentences. Open the named page. Rewrite one sentence a stranger could follow.

You are allowed to wait. You are allowed to say “I’m not sure yet.” You are not required to pick a team in the first second. You are required to look.

If it isn’t clicking

They think listening means losing, or they perform a fight. Slow down. Cooler claim. Two empty chairs, a recap and a table. You model theirs so that side would nod. They try the next one. If it is still theatre, postpone. The sequence is not a referee hour.

They offer a fluent sentence, a finished essay, or “just an opinion” as a truce.

Hear it. “How do you know? What’s a second place we could look?” Then look. “Just an opinion” can still have reasons, and two forecasts can still be better or worse supported by the sky. Correct a false reason without crushing the talk. If they write a straw, ask: “Would they sign that?”

They repeat the rumor, or they want a live fight as the object, or they want a machine to write the other side. Repeat the check, not the sticky word.¹⁷³ Stay with the recap, the snack box, the essay-claim. The later, heavier claim will need knowledge this sitting does not have.¹⁷⁴ A machine’s steelman pasted as theirs is write-my-reason. Close the window. If dual focus still will not hold after several cooler sittings, stay here. Get a human who already coaches discussion — a co-op tutor, a debate coach who will stay on ordinary stakes — for the talk part. You still own the object: a recap, a list, a named page, a clock.

Go ahead when 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, say a two-sentence steelman, and write a short reason a stranger could follow on a known stake. Stay longer when listening still feels like losing. A birthday does not settle it.

Tools, including AI

Point back to the thinking-hour box. Keep this short.

After they have tried, you may ask a tool to explain this page to you from a named book page, or to give extra questions you then vet. Throw out any that import a live controversy, a secret, a pretend expert, or a civic-web item. A labelled SCRIPT after the try is for you to say, or a labelled sequence they may read after the attempt — not a steelman for them to paste as theirs. A hint after an attempt is not the finished reason. A diagnosis of a reason they already gave is yours to hear

¹⁷³Stephan Lewandowsky, John Cook, Ullrich Ecker, and 19 co-authors, *The Debunking Handbook 2020*. Backfire effects occur only occasionally; continued influence is the sticky problem; detailed refutation outperforms a bare “that’s false”; repetition increases judged truth. Translation in this chapter: sports recap, snack box, or essay-claim only. Repeat the check, not the rumor. This is a translation, not a 15–18 randomized trial of the handbook.

¹⁷⁴Daniel T. Willingham, *American Educator*, Summer 2007; NSW occasional paper, 2019. Maxims without knowledge will not implement; sequence and revisit; near is not far. A later, heavier claim will need that later domain’s knowledge. This book teaches the moves and does not rehearse the later domain as content.

and decide.

You may not ask a tool to write their reason, essay, or steelman. You may not park an unsupervised chatbot as the only partner. You may not invent an expert identity. You may not grade from a detector. You may not print a certificate of thinking. You may not ask a tool to invent who started last week or whether a shop is closed. You may not hand them an agent as a thinking partner.

Ages 15–16. You hold the account. You are in the room. SCRIPT after the try.

Ages 17–18. You co-hold. After any tool, a closed-window paragraph. Exam terms still apply to their own submissions.¹⁷⁵

A tool that finishes the other side for you is performance, not dual focus. A thinking tool is not a secret friend. Keep accounts where you can open them.

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, say a two-sentence steelman, and write a short reason a stranger could follow on a known stake is done enough with this chapter, whatever the birthday.

Checklist before moving on.

- Lets the other person finish.
- Asks what they mean before arguing.
- Offers a reason that can be looked at.
- Leaves this page for a second source.
- Waits.
- Changes a mind when the check goes the other way, without treating that as losing.
- Says theirs so they would nod, then still looks.
- Treats a fluent sentence, a finished-looking paragraph, and “the posting looks official” as starting points, not checks.
- Writes the check so a stranger could follow it.
- Repeats the look, not the rumor.

¹⁷⁵College Board, 2026 AP Exam Terms, updated 27 April 2026, Section 4. Hamsa Bastani and colleagues, *PNAS*, 2025: high-school math trial, one crutch sentence. There is no AP Critical Thinking.

15–16 done enough. Prompted dual focus plus one written line.

17–18 done enough. Holding dual focus with less prompting; noticing a fluent caption or a finished-looking paragraph in place of a look; treating “just an opinion” as a claim to be examined rather than a truce; a closed-window paragraph after any tool.

The title a stranger can read is still **English**, or **Science**, or **History**. It is not Critical Thinking I. It is not AP Critical Thinking. That course does not exist. A “grade 11 critical thinking workbook” is a publisher’s scope, not a transcript line. Point to records for the dated notebook, the short written reason plus the check, and an optional two-source portfolio.

Life of the habit

Growing 15–16 into 17–18 is more miles on the same road, not a new faculty, and not a later stage with a different name. Revisit the same question next Tuesday.¹⁷⁶ Date the revisit. “I used to think... now I think...” after a look.¹⁷⁷ Fridge ground rules — we listen; we ask what you mean; we give a reason; we can change our minds; we write a reason a stranger could follow — then the next real disagreement. Posting is not practice. Placement is by skill, not birthday. There is no diploma of thinking. There is no certificate. There is no window that closes at 18. There is no thinking birthday at 16, 17, or 18. Frequency the evidence actually supports at the parent grain is unknown. The honest pitch is *often enough that the question is familiar*.

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

A parent who felt rusty should be able to say: I understand the sequence. I know what to say tomorrow. I know what a fluent “because it’s fair” sounds like when it is not yet a check. I know what a finished-looking paragraph without a named source looks like. We can do this.

A student should be able to say: I know what to try. I am allowed to wait. I can

¹⁷⁶Daniel T. Willingham, *American Educator*, Summer 2007; NSW occasional paper, 2019. Maxims without knowledge will not implement; sequence and revisit; near is not far. A later, heavier claim will need that later domain’s knowledge. This book teaches the moves and does not rehearse the later domain as content.

¹⁷⁷Robert H. Ennis, 2015 PDF, Disposition 9: take a position and change it when evidence and reasons are sufficient.

say the other side fairly. I can write a reason a stranger could follow. I can change my mind when we look.

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 teacher, a Pennsylvania evaluator, a New York quarterly reader, a later transcript, an admissions reader skimming a course description. That stranger will not have sat at your table. They will have a page.

This chapter is how you make that page at ages 15–18. 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, and keep the title English or Science or History. 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 teen.

What you are making

You are making a **dated notebook**, a **short written reason plus the check**, and, stacked over the year, an **optional portfolio of two-source pages**. Stimulus named. Sources named. You are not making a national diploma. You are not making Critical Thinking I. You are not making AP Critical Thinking. That course does not exist.

There is often **no** “Critical Thinking I” credit in high school, homeschool or otherwise. Public transcripts say English, Algebra II, Biology, United States History. A family that invents “Critical Thinking I, 1.0, A” for a sixteen-year-old has created

a slogan unless the year's work actually was a named elective a later reader can map. This book did not open such an elective on a public list.¹⁷⁸

There is no federal homeschool diploma and no national critical-thinking credit.¹⁷⁹ None of Texas, North Carolina, Pennsylvania, Virginia, or New York requires a critical-thinking course.¹⁸⁰ SAT Subject Tests were discontinued in June 2021. Do not send a 2026 junior to one.¹⁸¹

Two readers, if anyone outside the kitchen asks. The **state**, in a thick jurisdiction: an IHIP, an affidavit, a portfolio, an annual battery. A **later stranger**: a transfer school; college admissions; an athletic eligibility center; a University of California A–G reader; an employer. 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.

One sentence each, so a parent of a sixteen-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.¹⁸² Dual enrollment, Advanced Placement, credit-by-exam, and a common

¹⁷⁸A named A–G course titled "Critical Thinking" at a specific school: not verified in the sources opened for this book. Do not invent one. There is no AP Critical Thinking; AP Students lists 42 subjects. Access date for sources in these notes: 2 September 2026.

¹⁷⁹No 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.

¹⁸⁰None 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 9–12 required courses and three electives as a door, not a slogan; quarterly reports of hours, material covered, grade or narrative. HSLDA was not used as a legal primary.

¹⁸¹College Board discontinued SAT Subject Tests; last international administrations May and June 2021. Locked: discontinued June 2021.

¹⁸²University 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. AP, CLEP, Common App, and dual enrollment remain

college application are not this chapter beyond those two sentences. Scores help a stranger believe a *high-school* transcript. They do not replace a dated reason.

The national survey of homeschool subjects never offered a critical-thinking checkbox. Ninth-to-twelfth-grade English, social studies, and inquiry were neighbors on that survey, not a thinking row. Thinking moves, if they happened, happened inside English, science, or history.¹⁸³ Informal learning does not arrive as “English, 1.0, B+.” If a thick state later wants a log, the translation is: name the source, name the question, date it, write the short reason, name the check.

College and graduate inventories — the California Critical Thinking Skills Test, the Watson–Glaser — are designed for undergraduate, graduate, or employment screening.¹⁸⁴ They are not 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 home-school credit, still not those college inventories, still not this week’s hour.

Titles a stranger can read

Print these and only these as high-school names, if a name is needed at all:

English / Language Arts. Mathematics. Science. Social Studies / History. Art, Music, Physical Education.

Philosophy — only if the year’s work actually was a philosophy course a later NCAA or A–G reader could map. Still not Critical Thinking I.

Those names travel. They are the names public transcripts already use. They are later objects beyond those sentences.

¹⁸³National Center for Education Statistics, PFI 2016 (NCES 2020-001), Tables 8 and 9: no critical thinking, philosophy, logic, or informal reasoning row. Ninth-to-twelfth-grade English 85, social studies 81, inquiry 25 are neighbors, not a thinking percent. Do not paste neighboring subject percents into a thinking sentence. Informal learning was 12 percent in Table 6 (2016); it still translates, if a thick state asks, as source, question, date, short reason, check. NCES 2024-113 remains the latest federal homeschool count on 2 September 2026: 3.4 percent / about 1.765 million in 2022–23; 9th–12th 3.1 percent. Instruction-at-home 5.2 percent is a different bucket.

¹⁸⁴California Critical Thinking Skills Test: undergraduate and graduate (Facione 1990 ERIC, “College Level”). 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 2 September 2026: no named Philosophy for Children intervention report; no named “critical thinking” as a high-school programme report.

the names homeschool files, when they exist, already follow.

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 Written Reasoning I. Never AP Critical Thinking.

The dated notebook and the short written reason live *inside* English, Science, or History. Honesty on the title is the same rule as honesty on a reason. If the year’s work was English essays, kitchen checks, and two-source pages, the title is English and Science. A beautiful binder labelled “Emerging Adult, Level 1” 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 11 (source comparison; two-source pages; 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 11 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:

14 October 2026. Question: Does the library copy of *X* (call number) say the same thing as the weather-service page retrieved 14 October 2026 about how this glacier’s terminus has moved? Student: No, because the website omitted the measurement method and the author’s job. Check: we looked at the title page, the about page, and the methods paragraph. What would change my mind: a methods section in the web page that matched the monograph. Sources: [book title, call number]; [URL, date retrieved].

That is a record a parent, a Pennsylvania evaluator, a New York quarterly narrative, or a later admissions reader skimming a course description can actually use. It is not a credit. It is not a college inventory. It is not Cornell Level X. It is not a diploma. It is not a 4,000-word research paper. It is the year’s honest page.

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.**¹⁸⁵

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.

Pennsylvania. Secondary lists and graduation units are the thick objects at this age: four English, three mathematics, three science, three social studies, two 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 follows listed courses.

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 re-

¹⁸⁵None 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 9–12 required courses and three electives as a door, not a slogan; quarterly reports of hours, material covered, grade or narrative. HSLDA was not used as a legal primary.

quired. 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 two-source page inside English, Science, or History.

New York. Letter of intent, an Individualized Home Instruction Plan, quarterly reports, and an annual assessment. Grades 9–12 include electives as a door, not a slogan. 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.

If you live in none of those states, you still have a department page. Open it.

If they transfer, or if a later reader asks

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.

An A–G reader is looking for A–G areas. Critical thinking is not one of them. An NCAA reader may count philosophy as additional core. “Critical thinking” is not a named core area. Do not launder a kitchen enquiry into a course those lists do not contain.¹⁸⁶

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 write claim, because, check, so a stranger could follow it? If not, they are still in the written-reason chapter. Can they say theirs so the other person would nod, then look at a box score? If

¹⁸⁶University 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. AP, CLEP, Common App, and dual enrollment remain later objects beyond those sentences.

not, they are still in the opening of disagreement. High-sounding *titles* cannot skip those moves. An eighteen-year-old may still be in the 15–16 band of a chapter. A fifteen-year-old may already write the check unaided. Skill first.

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** or **History** 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 hours-versus-clock line. Stacked over the year, an optional portfolio of two-source pages. 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. Point back to the thinking-hour box: the unaided reason is the student's.

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,” “posted hours versus clock”);
- the **question**;
- a short written **reason**;
- the **check** — what you looked at;
- **sources** named.

That folder is not a transcript. At fifteen to eighteen, if you are writing high-school titles, write the titles the stranger already knows. The notebook is how you would defend an English or Science or History 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 wrote a reason a stranger could follow. 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 fifteen, or at eighteen. You do not get AP Critical Thinking. 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 AP Critical Thinking. There is no certificate of thinking. The folder matches the page. Same question next Tuesday, dated. 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 title is still English or Science or History. 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, the age label on the page, and whether the prompt stays on a recap, a rainfall graph, two library books, a captain pick, a short written reason, posted hours versus a clock.

A “grade 11 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. That trial was Key Stage 2 / Year 6, about age 10–11, **not this band’s trial**.¹⁸⁷ Dialogue may still be worth the hour as dialogue. It is not

¹⁸⁷Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

a proven engine of generic critical thinking or of late-high-school attainment at scale. An earlier, smaller efficacy trial had found about **+2 months** in reading and maths; that result did not replicate at effectiveness scale.¹⁸⁸ 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 plus a one-page reason, 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, a dated notebook. 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 labelled scientific reasoning? A novel written for a circle of enquiry? A short published guide with a set of terms in ordinary language? 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?

¹⁸⁸Stephen 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 *Mark* is not the 2015 finding.

Age label. Does the catalogue put this object at 15–18, at the young edge, or younger? *Mark* is in band. *Suki* is the young edge. Picture-book modules are out of band as a default.

Reach numbers on an organization’s page are that organization’s copy, not a home-school census and not an effect size.

What Works Clearinghouse, searched again on 2 September 2026, still has no intervention report named Philosophy for Children, named “critical thinking” as a high-school programme, or dialogic teaching as generic critical thinking.¹⁸⁹ Neighboring reports exist for preschool oral language, character education, and college advising. They are not a thinking franchise for ages 15–18. 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 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 or History.

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, posted hours versus a clock. 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.

¹⁸⁹What Works Clearinghouse, re-opened 2 September 2026: no named Philosophy for Children intervention report; no named-critical-thinking high-school 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 that 2021 effectiveness trial, found **0 months** extra progress on reading and maths, labelled Key Stage 2 / Year 6 $\approx$ 10–11, **not this band’s trial**.¹⁹⁰ Age labels from the catalogue this book opened: *Harry* 11–12 and *Lisa* 12–13 — younger; *Suki*, **14–15, young edge**; *Mark*, **16–17, in band**. Novels ~80 pages; manuals ~400. Parent load is high. School-shaped. Large trials used a UK training charity that **dropped the novels**. Owning *Mark* is not the 2015 +2 months, and it did not survive 2021 **0 months**.¹⁹¹ This chapter does not print a 2026 U.S. list price. Open the current catalogue if you want the books.

Ordinary analogues only. If a chapter prompt is a live fight, skip it. *Mark* names vandalism, arrest, law, democracy, freedom, justice — open the chapter; skip live fights; substitute a sports-rule fairness question, a workplace-adjacent chore rule, a library-fine dispute. Skip ghost, death, and “be good” as 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. *Mark* at 16–17. *Suki* at the 14–15 young edge, if a fifteen-year-old still wants a novel’s grain.

Transcript. The novel title is not the course name. English, if the year’s reading was the year’s reading. Philosophy only if the year’s work actually was a philoso-

¹⁹⁰Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

¹⁹¹Stephen 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 *Mark* is not the 2015 finding.

phy course a later reader could map.

Thoughtful (formerly SAPERE)

In 2025, SAPERE became Thoughtful.¹⁹² 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. Steal the shape — a stimulus, a minute of wait, one actual question, last thoughts — if it helps. Philosophy for Children in that 2021 trial: **0 months** extra progress on reading and maths, labelled Key Stage 2 / Year 6 $\approx$ 10–11, **not this band’s trial**.¹⁹³ The 2015 +2 months did not replicate at scale.¹⁹⁴

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.

¹⁹²In 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.

¹⁹³Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

¹⁹⁴Stephen 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 *Mark* is not the 2015 finding.

The Philosophy Foundation

A UK charity. It **names home educators**: groups of 5–15 in the same key stage if a local philosopher is available or travel is paid.¹⁹⁵ London-weighted. This book does not claim U.S. availability or fees. Do not borrow the SAPERE/Thoughtful trials as this charity's trials. When the hour is Philosophy for Children, copy **0 months** from 2021, labelled Key Stage 2 / Year 6 $\approx$ 10–11, **not this band's trial**.¹⁹⁶

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.

PLATO, and Ethics Bowl age-labelled

Philosophy Learning and Teaching Organization. A U.S. nonprofit. Mission language names **families**. A toolkit of more than 250 lesson plans. Open a lesson. Substitute if the prompt is a live fight.

National High School Ethics Bowl: **grades 9–12**, in band. Homeschool teams at organizer discretion. Last opened fee, 2025–26 pages: **\$175 / \$250**. This chapter does not invent a 2026–27 fee. Steal the format: collaborative reason, not a debate-win. Ordinary analogues only — a library-fine dispute, a sports-rule fairness question, a chore rule. Skip this year's case set if the cases are live fights.

¹⁹⁵The 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 not verified in the sources opened. 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.

¹⁹⁶Palak 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 — **not this band's 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

Middle School Ethics Bowl, grades 6–8, is out of band. Never Ethics Bowl I on a transcript.

Fit. A written plan, or a Bowl season at 9–12, still picking the prompt. Moderate to high load if you host.

Transcript. Never PLATO as the course name. English, or Philosophy only if the year’s work actually was a philosophy course a later reader could map.

Wartenberg / Prindle picture-book modules

Picture-book modules are **out of band as a default** at 15–18: mixed-age table with a younger sibling only. Open a module. Skip live fights.

Fit. Not the default eighteen-year-old object.

Transcript. Not the sixteen-year-old’s title.

Paper map, then optional sites

Three boxes on paper — Claim / Reason / Objection — then the sentence a stranger could follow, plus the check, are the type this book already taught. Paper first.

Sites exist. One classroom site offers instant access without a student account. A paid asynchronous map course lists grades 7–12 and \$25 per student on the page this book opened.¹⁹⁷ None is a clearinghouse intervention or a diploma line. Steal the map. Ordinary prompt only. Under-13 rules do not bind this band; a login is still optional, still not a credit, still not unsupervised. Point back to the thinking-hour box.

Fit. A family that wants a visual map: paper, low load. A site, after paper, on the parent’s account. 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.

¹⁹⁷Kialo Edu Instant Access (no student account) and Instant Access copy: site copy, not a trial. ThinkerAnalytix *How We Argue*: grades 7–12, \$25 per student on the page opened — a paid course, not a credit. Rationale / Austhink: 2026 price not verified in the sources opened. Tim van Gelder’s college argument-mapping work is university; no 15–18 argument-mapping randomized trial was opened. Home type = three boxes on paper. Paper first.

Paul–Elder as a brand in ordinary language

A children’s mini-guide (K–6, cartoon characters) is **out of band** at 15–18.¹⁹⁸ *Concepts and Tools*, eighth edition, 2019, is the same publisher’s secondary pocket guide. This is a **brand** — a published method with terms in ordinary language (what do you mean; how do you know) — not a meta-analysis of 15–18 thinking. Steal “what do you mean?” if it helps. Do not teach the wheel as the science of the age.

Fit. Optional vocabulary in a short booklet, still with an object on the table. Children’s mini-guide is the wrong grain. The wheel is not a credit.

Transcript. Never Paul–Elder. Never the wheel. English, if vocabulary lived inside English.

Workbooks, routines, named Advanced Placement, tests

Puzzle-shaped workbooks and prompt cards exist. Steal a prompt. Skip live-fight cards. The hour keeps its ordinary name.

There is **no AP Critical Thinking**. AP English Language, AP English Literature, AP U.S. History, AP Seminar, and AP Research are named courses; Seminar and Research are school-shaped. They are not this book’s kitchen hour.

Tests. The California Critical Thinking Skills Test is undergraduate and graduate. Watson–Glaser is employment and graduate screening. Cornell Level X: grades 5–12+, a sitting from a publisher, not the kitchen hour, not a homeschool credit, not those college inventories. State tests in the five opened jurisdictions are reading and math. SAT, ACT, and PSAT are college-ready neighbors, not thinking exams. SAT Subject Tests were discontinued in June 2021.¹⁹⁹

¹⁹⁸Linda Elder, *The Miniature Guide to Critical Thinking for Children*, second edition, 2006: 24 pages, cartoon characters, K–6 classroom use — out of band at 15–18. Brand, not a meta-analysis. *The Miniature Guide to Critical Thinking Concepts and Tools*, 8th edition, 2019: the same publisher’s secondary pocket guide. Steal “what do you mean?” if useful. Do not teach the wheel as the science of 15–18 thinking.

¹⁹⁹California 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–

Fit. A puzzle shape after opening it, still with an object on the table. Named AP: the named course, not “AP Critical Thinking.”

A short chooser, not a ranking

Nothing spent, tonight → chapter plus one question plus a one-page reason (low) — not “Critical Thinking I.”

Kitchen already happening → one-change check labelled scientific reasoning (low).

Stranger-readable object → dated notebook + short written reason + named sources + check (low to moderate).

Visual map, no login → paper claim / because / unless / check (low). Paper before any app.

Visual map with a site → parent-hosted instant access, ordinary prompt (low to moderate).

Paid map course → grades 7–12, \$25, after paper (moderate) — not a credit.

Co-op hour → a toolkit lesson, or a facilitated group if available (moderate to high). When the hour is Philosophy for Children, copy **0 months**, labelled Key Stage 2 / Year 6 $\approx$ 10–11, **not this band’s trial**.²⁰⁰

12 product line. State tests in Texas, North Carolina, Pennsylvania, Virginia, and New York, as opened, are reading and math. SAT/ACT/PSAT are college-ready neighbors, not critical-thinking exams. SAT Subject Tests discontinued June 2021. There is no AP Critical Thinking. IAPC 2026 U.S. list prices, TPF fees, Thoughtful CPD, Rationale 2026 dollars, and NHSEB 2026–27 fee remain as marked in the research brief; last opened NHSEB fee \$175 / \$250 on 2025–26 pages. A named A–G course titled “Critical Thinking” remains unverified. Do not invent one.

²⁰⁰Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

Bowl season → National High School Ethics Bowl grades 9–12, last opened \$175 / \$250, skip live-fight cases (high) — not “Ethics Bowl I.” Middle School Bowl is out of band. This chapter does not invent a 2026–27 fee.

Novels and a manual → *Mark* 16–17 in band; *Suki* 14–15 young edge (high). Philosophy for Children: **0 months** in 2021, labelled KS2, not this band’s trial.²⁰¹

School-shaped training → Thoughtful, formerly SAPERE; UK; trials are KS2 (high). Copy **0 months**.²⁰²

Explicit vocabulary → Paul–Elder *Concepts and Tools* as an optional brand in ordinary language (moderate) — children’s mini-guide out; the wheel not a credit.

Named Advanced Placement → English Language / Literature / U.S. History / (school-shaped) Seminar or Research (high) — not “AP Critical Thinking.”

Test score → Cornell Level X is a sitting from a publisher, not a credit, not the college inventories, not the family hour.

Fit, not rank.

²⁰¹Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

²⁰²Palak 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 — **not this band’s 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**, labelled KS2. Access date for sources in these notes: 2 September 2026.

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, or a sentence a stranger could follow. 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, labelled Key Stage 2 / Year 6 $\approx$ 10–11, **not this band's trial**.²⁰³ Paper is on the table before any app. *Mark* is age-labelled 16–17; *Suki* 14–15 at the young edge. National High School Ethics Bowl is grades 9–12, ordinary analogues only. 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.

²⁰³Palak 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 — **not this band's 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**, labelled KS2. Access date for sources in these notes: 2 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 2 September 2026.