

THE LEARNER'S TOOLKIT

The Critical Thinker's Toolkit

Level 2

Foundations of Critical Thinking



TEACHING GUIDE

Reasoning, Evidence, & Communication

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THE LEARNER'S TOOLKIT SERIES

The Critical Thinker's Toolkit

Level 2 – SAMPLE

Skills-Based Critical Thinking Instruction



Building the Foundations of Reasoning

SEA Publishing

This course is in layout.
Then it will get a final
review for typos. It will
be out in early January
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The Learner's Toolkit Series

The Learner's Toolkit is a series of evidence-based curricula built on Hochman Method principles of explicit, scaffolded instruction. Each toolkit provides systematic teaching that respects both child development and parent/teacher capabilities.

The Critical Thinker's Toolkit Level 2 teaches students to evaluate evidence, identify assumptions, trace causal reasoning, recognize bias, and revise conclusions when evidence warrants.

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The Stargazer's Notebook

Why Critical Thinking?

Thinking is something we all do constantly but learning how to think well is something else entirely. Reasoning, evaluation, and revision are skills that develop with guidance and practice, not traits people either have or lack.

Critical thinking is a set of skills used to evaluate claims, test assumptions, and revise conclusions when new information appears. These skills do not belong to a single subject. They show up in science, history, literature, and in everyday conversations. When learners know how to evaluate evidence and examine their own thinking, they make stronger academic decisions and more thoughtful everyday ones as well.

But these skills do not emerge on their own. When they are assumed rather than taught, learners do not stop thinking. Instead, they rely on shortcuts. They accept labels, defer to authority, lean on emotion, or trust what feels familiar. Over time, beliefs formed this way can become difficult to revise, even when strong evidence appears.

That is why this course exists.

Course Design

This course was designed with a skills-based philosophy at its core. Just as strong writing does not emerge from being told to write better, strong thinking does not emerge from being told to think critically. In both cases, complex outcomes depend on explicit instruction, deliberate practice, and attention to the specific moves that make disciplined thinking possible.

Rather than treating critical thinking as a vague disposition or a discussion style, this course breaks it into teachable components. Learners practice how to evaluate evidence, test assumptions, recognize weak reasoning, and revise conclusions. These skills are taught directly, revisited often, and applied across contexts so they become habits rather than isolated lessons.

The goal is not performance or debate. The goal is transfer.

What Changes When Learners Think Critically

In academic work, critical thinking leads to clearer writing, stronger arguments, and deeper understanding rather than memorization. Learners can explain why they think something, not just what they think.

In social situations, critical thinking helps learners navigate disagreement. They learn to separate facts from interpretations, recognize perspective without falling into the idea that everyone is equally right, and revise their thinking without feeling personally attacked.

Internally, critical thinking supports confidence. Learners who understand their own thinking are less dependent on authority and less unsettled when information changes. They know how to update beliefs instead of defending them at all costs.

Why This Matters Now

We are living in a world saturated with information. Every day, our children encounter claims, images, headlines, and stories designed to make them believe something, often before they have had a chance to ask whether it is true.

AI can generate text, images, and video that look real. Algorithms prioritize what keeps people watching rather than what is accurate. Opinions spread faster than evidence, and confidence is often mistaken for credibility.

This is the world our children are growing up in. It is also the world we are navigating alongside them.

Critical thinking is not a defense against this environment. It is a way to move through it with clarity. It is the ability to pause before believing, to ask what the evidence is, who benefits from a claim being accepted, and what would be required to change one's mind.

The good news is that these skills can be taught. They can be taught to a young child, to a teenager, and to an adult. The tools remain the same. What changes is how those tools are practiced. The habits themselves transfer.

What This Course Provides

This course gives learners practical tools for thinking well. Tools for slowing down, for asking better questions, and for noticing when a story is doing their thinking for them. Tools for updating beliefs without feeling threatened or defensive.

Critical thinking is not about having the right answers. It is about having a reliable way to arrive at better ones.

These skills do not disappear when a course ends. They carry into new subjects, new relationships, new challenges, and eventually into adulthood.

That is the real value of this work: thinking tools for a lifetime.

Much Love,

Blair Lee

Activity 1: You Are Already a Thinker

Objective: Recognize different types of thinking and understand metacognition as a strategic tool

SETUP: Prepare in advance: tree image, strong familiar scent, familiar object in opaque bag, familiar food, whiteboard and marker.

Part 1: Your Brain Just Knows!

1. Say: I am going to show you something. Notice what happens in your brain.

2. Show the tree image. What is this?

AR: *A tree.*

3. Have them smell the scented item. What do you smell?

4. Have them reach in the bag. What is in there?

5. Make a familiar sound. What was that? Point to where it came from.

6. Have them taste the food (eyes closed). What are you tasting?

7. Ask: Did you have to think about what any of those were, or did your brain know automatically?

AR: *My brain knew automatically.*

8. Show the tree again and ask:

- How does your brain DO that? How did it know "tree" and not "cloud"?
- Where did your brain learn what a tree looks like?
- If you had never seen a tree, would your brain know what it was?

9. Say: Every time you experience something, your brain stores it. Later, your brain searches through everything it knows incredibly fast and says, "I know what that is."

10. Ask: Can you think of other times when your brain just knows something without thinking hard? (Prompt if needed: recognizing loved ones, favorite songs, pulling away from hot things.)

Part 2: Two Kinds of Thinking

1. Say: When your brain just knows something—that is automatic thinking. That is one of the two types of thinking your brain does. Some challenges need you to think on purpose—to choose a thinking strategy.

WRITE OR READ WITH YOUR LEARNER

AUTOMATIC THINKING vs. STRATEGIC THINKING

AUTOMATIC THINKING (Brain just does it)

Examples: Recognizing things, Knowing smells, Remembering your name

STRATEGIC THINKING (You choose how to think)

Examples: ? (fill in together after challenges)

2. Present three quick challenges. After each, ask: Did this feel like automatic thinking—like how you recognized the tree—or different?

- **Memory: Say:** I will show you five cards for 10 seconds. Then you tell me what they were.
- **Planning: Say:** Describe steps to plan a weekend camping trip.
- **Problem: Say:** You are trying to fix something that is broken and your first approach is not working. What would you do?

3. Help them notice:

- **Tree:** Instant. Automatic. No effort.
- **Challenges:** Their brain had to work.

4. Say: This is strategic thinking. Your brain deliberately chose how to approach the problem. Here is what's powerful about this: When you *notice* which kind of thinking you're using, you gain control over it.

- You can catch when something is not working and switch strategies instead of staying stuck.
- You can match your approach to the problem instead of doing the same thing every time.
- You can learn from mistakes because you know what you were doing.
- You can explain your reasoning to others, and to yourself.

5. Say: All of this depends on one ability: metacognition.

WRITE OR READ WITH YOUR LEARNER

Metacognition = thinking about your thinking

6. Say: That is the first critical thinking skill you will be working on.

REFLECTION

1. Ask: What does metacognition mean?

AR: *Thinking about your thinking.*

2. Ask: What are the two kinds of thinking we learned about?

AR: *Automatic thinking and strategic thinking.*

3. Say: That awareness—noticing your own thinking and whether your approach is working—is metacognition.

Teaching note: Between now and the next activity, intentionally model and discuss instances of automatic thinking and strategic thinking when they naturally occur.

Activity 2: Strategy Practice with Monitoring

Objective: Learn three specific thinking strategies and practice monitoring their effectiveness

Metacognitive Review

1. Ask: Yesterday we learned about metacognition. What does that mean?

AR: *Thinking about your thinking.*

2. Ask: We learned about two kinds of thinking. Do you remember what they are?

AR: *Automatic and strategic.*

3. Say: Today, we will learn three specific strategies you can use for strategic thinking. You will practice using them in different challenges, and you will learn to monitor whether they are working.

Introducing Three Thinking Strategies

1. Say: Strategic thinking means deliberately choosing how to think. Here are three strategies you can choose from. You probably already use these without realizing it.

WRITE OR READ WITH YOUR LEARNER

THREE THINKING STRATEGIES

1. Think-Out-Loud: Say your thinking process to yourself: aloud or in your head.
2. Break-It-Down: Turn one big thing into smaller steps.
3. Try-Check-Adjust: Try something, check if it works, adjust if needed.

2. Say: Different strategies work better for different challenges. Part of being a strategic thinker is choosing which strategy fits the situation. Let's practice each one.

Introducing Monitoring Questions

1. Say: Strategic thinkers check if their strategies work. They use metacognition—they think about their thinking. As you practice today, I will ask you questions like "Is this working?" and "Did this strategy help?" These questions help you notice your own thinking.

WRITE OR READ WITH YOUR LEARNER

MONITORING YOUR THINKING

DURING: Is this working?

AFTER: Did my strategy help?

2. Say: You will practice each strategy today. While you work, check if it is working. Afterwards, think about whether the strategy helped. Sometimes you will need to switch strategies. When you notice your strategy is not working and choose to switch, you are using metacognition.

Challenge #1: Think-Out-Loud Strategy

SETUP: Gather a pile of mixed items (tools, craft supplies, game pieces, or whatever you have).

1. Say: These items need organizing into a system that makes sense. How would you organize them? For this challenge, you will practice using Think-Out-Loud.

2. Model: Say: Let me show you what Think-Out-Loud looks like. If I were doing this, I might say: 'I could sort by type... but then big and small items would be mixed together. I could sort by how often I use them... then the things I need most would be easy to grab.' See how saying my thinking helps me compare options?

3. Say: Now you try. As you organize these items, think out loud. Say what you are deciding and why.

DURING

Let them work for a few minutes. If they are working silently, prompt: Remember to think out loud. Tell me what you are deciding.

4. Ask: After a few minutes, pause and ask: Is this strategy helping? How?

AFTER

5. Ask: How did saying your thinking out loud help?

6. Say: This strategy helps when you need to examine your reasoning or make complex decisions.

Challenge #2: Break-It-Down Strategy

SETUP: Provide building materials (Legos, blocks, cardboard, tape, whatever is available).

1. Say: Design and build something that can hold this book at least 6 inches off the table without falling over. For this challenge, you will practice using Break-It-Down.

Guided Practice

2. Say: This is a big challenge. You need to design something, figure out how to build it, and test if it works. Breaking it into steps makes it less overwhelming. Let's break it down together.

3. Help them break it down:

- Step 1: What do you need to build? (something stable, tall enough, strong enough)
- Step 2: What design might work?
- Step 3: What materials will you use?
- Step 4: Build it.
- Step 5: Test it. Does it work?

4. Say: Now work through your steps.

DURING

Let them work. After a few minutes, ask: Is breaking this into steps helping? How? If they are struggling, say: Which step are you on? What does that step need?

AFTER

5. Ask: How did breaking this big challenge into steps help?

6. Ask: Did you go back and adjust any steps based on what you learned?

7. Say: This strategy helps when something feels overwhelming—you tackle one step at a time instead of everything at once.

Challenge #3: Try-Check-Adjust Strategy

SETUP: Choose a small object and hide it from your learner.

1. Say: I hid an object somewhere in this room. You will look for it, and I will give you feedback. When you move closer, I will say 'warmer.' When you move farther away, I will say 'colder.' In this challenge, you will practice Try-Check-Adjust: You

try moving in a direction, check my feedback, and adjust your search based on what you learned.

DURING

Play the game. As they search, give clear "warmer" or "colder" feedback.

Observe their strategy:

- Do they keep moving in a direction when you say "colder"?
- Do they adjust quickly when they get feedback?
- Do they try different areas systematically?

If they are not adjusting, prompt: I said colder. What does that tell you? What should you try now?

AFTER

2. Ask: How did my feedback help you adjust your search?

3. Ask: What happened when you moved in a direction and I said "colder"?

4. Say: This strategy is powerful when you cannot know the right answer immediately—you learn by trying, getting feedback, and refining.

Challenge #4: Choosing and Switching Strategies

SETUP: Cut out the shapes on the Lesson 1 Shapes Template.

1. Say: Put these shapes in order from smallest to biggest.

2. Do not prompt about strategy. Let them begin however they choose.

DURING

Watch for confusion. Do not rush to help. Let them struggle for 1–2 minutes. This productive struggle is valuable.

When you see confusion or frustration, pause:

3. Say: I see you are stuck. That is a signal. What is your brain telling you?

4. Help them articulate: Your current approach is not working well. That is not a problem. That is information. What does that tell you about whether this strategy is working?

5. Say: You just did something important. You noticed your strategy was not working. That is smart thinking. What different strategy could you try?

6. Let them choose a new strategy. If they are truly stuck, offer options: Would Think-Out-Loud help? Would Break-It-Down help by sorting into groups first, like "definitely small," "medium," "big"?

7. Let them solve it using their new strategy.

AFTER

8. Ask: What was your first strategy? Why did it stop working?

9. Ask: What made you realize you needed to switch?

10. Ask: What strategy did you switch to? Did it work better?

11. Say: Getting stuck does not mean you are bad at thinking, it means you need a different strategy. Noticing that and switching is exactly what strategic thinkers do.

REFLECTION

1. Ask: When did you notice a strategy was not working? What did YOU DO: INDEPENDENT PRACTICE?

2. Ask: How does choosing a strategy deliberately feel different from just trying to solve a problem without thinking about your approach?

3. Say: Every time you chose a strategy, checked whether it was working, or adjusted, you were practicing metacognition. Eventually this monitoring becomes automatic.

Teaching note: Supporting Monitoring: The 'Is this working?' and 'Did my strategy help?' questions may feel repetitive at first. That is intentional. These questions are training wheels. With practice, learners internalize them and start monitoring automatically.

Lesson 2

What Do I Know?

BIG IDEA: We can distinguish what we actually know from what we believe before treating beliefs as facts.

TEACHING NOTES

Lesson 2 builds on Lesson 1's metacognitive foundation by teaching learners to examine the basis of their knowledge. At this age, children are developing the capacity to distinguish "I know this for certain" from "I think this is true."

Teaching Approach

- Emphasize that admitting "I DO: MODELING not know" is intellectual strength, not weakness.
- Help learners recognize they hold many beliefs they have not verified.
- Model catching your own unverified beliefs frequently.
- Normalize the process of checking beliefs before acting on them.
- Focus on the practical skill: recognizing when you are treating beliefs as facts.

Important:

This lesson is NOT about making children doubt everything or become paralyzed by uncertainty. It is about developing the habit of asking "How do I actually know this?" so they can identify which beliefs to verify before making important decisions.

Materials Needed

- **Activity 1:** Whiteboard or large paper, markers
- **Activity 2:** Paper for recording, markers
- **Activity 3:** Cards for triage (Appendix)
- **Activity 4:** Materials for live verification
- **Activity 5:** Short story from the Student Workbook
- **Activity 6:** Spy Alley board game

Read This With Your Learner

In Lesson 1, you learned about metacognition—noticing what you are thinking and how you are thinking. In this lesson, you will learn to examine what you know versus what you believe. Right now, you probably believe many things. You might believe your friend is upset with you, that you are bad at drawing, that it will rain tomorrow, or that a certain game is too hard for you.

Here is the question: Do you actually KNOW these things? Or do you BELIEVE them without checking? Strong critical thinkers can tell the difference. They ask themselves: How do I actually know this? Did I observe it? Did I verify it? Or am I just assuming?

This is important because: When you treat beliefs as facts without checking them, you can make poor decisions, hurt relationships, or miss opportunities. When you recognize what YOU DO: INDEPENDENT PRACTICE not actually know, you can choose what to verify before acting.

In this lesson, you are working with beliefs you are aware of thinking—beliefs you notice yourself having. In the next lesson, you will go deeper and learn about assumptions—beliefs that hide inside your reasoning without you even noticing them at all. But first, you need to practice recognizing the beliefs you ARE aware of.

Lesson 2

Activity 1: Know vs. Believe

Objective: Learn to distinguish verified knowledge from unverified beliefs

Metacognitive Review

1. Ask: In Lesson 1, you learned to notice what you are thinking. Can you give an example of when noticing your thinking helped you?

PR: *Caught a mistake, realized confusion, adjusted approach.*

2. Say: Today, you will use metacognition to distinguish KNOWING from BELIEVING.

Introduction

Write or read with your learner

KNOW = Can verify it as a fact

BELIEVE = Consciously think it is true, but have not verified

1. Say: The difference is that knowing means you have evidence. Believing means you consciously think it is true but have not checked yet.

I DO: MODELING

1. Say: Let me show you examples from my own thinking.

- Example 1: I know the milk expires on November 25th. I checked the carton this morning.
- Example 2: I believe we have enough milk for the week. I have not calculated—I am guessing based on past weeks.

2. Say: See the difference? Knowing requires evidence. In this lesson, we are working with beliefs you notice yourself thinking. In the next lesson, you will learn about assumptions—beliefs your brain uses without you noticing.

WE DO: GUIDED PRACTICE

1. Say: For now, focus on catching the beliefs you ARE aware of thinking. Let's sort statements together. For each: Does this person KNOW or BELIEVE? How can you tell?

2. Statement 1: The temperature outside is 45 degrees.

- Discuss: KNOW if you checked a thermometer. BELIEVE if you guessed based on how it feels.

3. Statement 2: My friend has soccer practice on Thursdays.

- Discuss: KNOW if they told you or you have seen their schedule. BELIEVE if remembering from months ago without checking.

4. Statement 3: My friend will be at soccer practice today.

- Discuss: BELIEVE. Predicting. Even if practice is scheduled, you have not verified that your friend will be there.

YOU DO: INDEPENDENT PRACTICE

1. Say: Now sort these statements yourself. For each: Know or Believe? Explain your reasoning.

- My project instructions say to use three sources.
- This project will be easy.
- My grandmother lives in Boston.
- I am bad at drawing.
- There are 24 hours in a day.

2. After sorting, review together.

Answer Key:

- KNOW if you checked the instructions. BELIEVE if you are remembering without verification.
- BELIEVE—predicting difficulty.
- KNOW—can verify where someone lives.
- BELIEVE—a judgment about yourself, likely based on limited evidence or old experiences.
- KNOW—verifiable definition.

REFLECTION

1. What is the difference between knowing and believing?
2. Why does it matter whether you have verified something?

Lesson 2

Activity 2: Catching Beliefs Stated as Facts

Objective: Learn to recognize when you or others state beliefs as facts (without "I think" or "I believe") and build the habit of asking "Where's the evidence?"

Metacognitive Review

1. Ask: Last time, you learned the difference between knowing and believing. Can you explain it?

AR: *Knowing = evidence; Believing = thinking something is true without checking.*

2. Say: Today, you will learn to catch beliefs stated as facts—statements that sound true even though they have no evidence because they are missing "I think" or "I believe."

Monitoring Your Thinking

1. Say: Remember the monitoring questions from Lesson 1? Today we will use them to check our know versus believe thinking.

Write or read with your learner

MONITORING YOUR THINKING

BEFORE: Do I know this, or am I believing it without checking?

DURING: Am I acting on beliefs as facts?

AFTER: Did I catch a belief?

2. Say: These questions help you notice when you are confusing belief with knowledge.

Teach the Pattern

1. Say: Some beliefs are easy to spot because they use signal words.

Write or read with your learner

Obvious beliefs use signal words: I think... I believe... Probably... Maybe...

2. Say: But many beliefs are stated as facts. People say them confidently without "I think" or "I believe," even though they have not checked them. These are hidden beliefs.

Write or read with your learner

Beliefs sound like facts (no signal words):

"This always happens." (not "I think this always happens")

"That rule never works." (not "I believe that rule never works")

"This will take forever." (not "This will probably take forever")

"It is definitely going to snow." (not "I think it will snow")

3. Say: These sound like facts, but they are actually beliefs unless there is evidence. The way to catch them is by asking one question every time: "Where's the evidence?"

I DO: MODELING

1. Example 1: Say: Everyone loves this game.

- What do I know? I know I like the game.
- What am I believing? That everyone does.
- Do I have evidence? No. This is a hidden belief.

2. Example 2: Say: My cat can understand me when I talk to her.

- What do I know? My cat reacts sometimes.
- What am I believing? She understands me.
- Do I have evidence? Maybe she does, but without any evidence this is a hidden belief not a fact.

WE DO: GUIDED PRACTICE

1. Say: Let's try a few together. For each, let's discuss: What do they know? What are they BELIEVING?

2. Say: This product has great reviews, so it must be good.

- KNOW: The reviews say positive things.
- BELIEVE: The reviews are genuine and the product is actually good (could be fake reviews, paid promotions, or just different preferences).

3. Say: Dogs are always faster than people.

- KNOW: Some dogs are fast.
- BELIEVE: All dogs are faster (generalization).

4. Say: It is going to snow this afternoon.

- KNOW: It might be cold/cloudy.
- BELIEVE: Certain prediction.

YOU DO: INDEPENDENT PRACTICE

1. Say: Now you try. For each statement, tell me: What do they know? What are they believing?

- No one recycles. (KNOW = Some people do not recycle. BELIEVE: That means no one recycles. = Generalization.)
- Bad smells cause disease. (KNOW = Some things that cause disease smell bad. BELIEVE: The smell itself causes the disease. = Incorrect causal belief.)
- This influencer's recommendation must be honest because they have millions of followers. (KNOW = They have followers and recommended it. BELIEVE = Popularity means honesty. There is no evidence followers = trustworthiness.)

Build the Habit

1. Write: WHERE'S THE EVIDENCE?

2. Say: Asking "Where is the evidence?" is your one habit for catching beliefs stated as facts. If you cannot point to evidence, it is a belief, not a fact. This is what strong thinkers like scientists, journalists, and investigators do. They do not accept claims without checking.

Why This Course Uses Games

Each lesson in this course is paired with a game chosen to reinforce a specific thinking skill. These games are not breaks from learning. They are structured environments where thinking becomes visible. Games create real constraints, incomplete information, and consequences for decisions, which makes them powerful tools for practicing critical thinking in a concrete way.

When learners play a game, they naturally form beliefs, test strategies, revise conclusions, and notice when an approach is not working. Because the stakes are low and the feedback is immediate, learners are more willing to reflect on their thinking, catch mistakes, and adjust. This makes games an ideal setting for practicing skills like metacognition, evidence evaluation, assumption checking, and belief revision without pressure of performance.

Lesson 2

Activity 6: Spy Alley Game

Objective: Apply the complete skill—distinguishing knowing from believing and verifying before acting—through gameplay.

Before Playing

1. Say: This game is perfect for practicing know versus believe. As we play, you will form beliefs about other players' identities based on limited clues. The challenge is: When do you actually KNOW versus when are you just BELIEVING? Players who treat beliefs as facts and accuse too early get eliminated. Players who verify, by gathering more evidence, have better success.

2. Say: Remember: In this game, you KNOW someone's identity only if they are forced to reveal it or if you have eliminated all other possibilities. Everything else is BELIEVING based on clues.

During Play

1. Play Spy Alley.

2. When natural moments arise (when someone is considering an accusation), pause to ask:

- What evidence do you have about this player's identity?
- Do you KNOW their identity, or are you BELIEVING based on limited clues?
- Is one clue enough to verify, or could it mean something else?

3. Model your own thinking occasionally:

- I am believing they might be the German spy because they bought the German password, but I do not know yet. I need more evidence before I act on that belief.

After Playing

1. Ask: Were you ever wrong about someone's identity? What belief did you treat as fact?

2. Ask: When did you catch yourself believing something without enough evidence?

3. Ask: When did you decide you had enough evidence to know versus just believe?

4. Ask: What happened when you accused someone based on beliefs instead of knowing?

Lesson 4

Activity 2: Catching and Evaluating Interpretations

Objective: Recognize when interpretations are stated as facts and evaluate whether they are well-supported.

Metacognitive Review

1. Ask: What is the difference between a fact and an interpretation?

AR: *A fact is what you observe or verify. An interpretation is the meaning you assign to what you observe.*

2. Say: In Activity 1, you practiced separating facts and interpretations; now you will also judge how well an interpretation is supported by facts. Today, you will learn to catch interpretations that hide inside statements that sound like facts and then evaluate whether those interpretations are well-supported.

Teaching the Skill

1. Say: In Lesson 2, you learned to catch beliefs stated as facts. Today WE DO: GUIDED PRACTICE something similar: catching interpretations stated as facts.

2. Say: When your brain assigns meaning to what you observe, it happens so fast that you state the interpretation as if it were a fact.

Write or read with your learner

INTERPRETATIONS THAT SOUND LIKE FACTS:

- "This is hard."
- "She is mad at me."
- "The weather is nice."
- "The dog is friendly."

3. Say: These sound like facts, but they are actually interpretations—meanings assigned to observations.

4. Say: To work with interpretations, you need to do two things:

- Catch them by asking: Can I observe this, or am I assigning meaning?
- Evaluate them by asking: What facts support this? What else could these facts mean?

I DO: MODELING

Statement: The dog is friendly.

Step 1: Catch it

1. Ask myself: Can I observe "friendly" directly?

No. "Friendly" is an interpretation.

2. Ask: What are the facts?

- Dog is wagging its tail
- Dog is approaching people
- Dog is not growling

3. Say: So "The dog is friendly" is an interpretation of the dog's behavior, not a fact I can observe directly.

Step 2: Evaluate it

4. Ask: What facts support this interpretation?

- Wagging tail usually means friendly
- Approaching people suggests friendly
- Not growling suggests friendly

5. Ask: What else could these facts mean?

- Dog might be excited but not actually friendly
- Dog might be approaching because it wants food
- Dog might be wagging tail nervously

6. Say: So "friendly" is reasonably supported, but other interpretations are possible.

WE DO: GUIDED PRACTICE

1. Say: Let's try one together using both steps.

Statement: My friend is ignoring me.

Step 1: Catch it

2. Ask together: Can you observe "ignoring" directly?

Work together: No. "Ignoring" is an interpretation.

3. Ask: What might the actual facts be?

Work together:

- Friend did not respond to my text
- Friend walked past without saying hello
- Friend did not sit with me when we were hanging out

Step 2: Evaluate it

4. Ask: What facts support the interpretation "ignoring me"?

- Not responding could mean ignoring
- Walking past could mean ignoring
- Not sitting together could mean ignoring

5. Ask: What else could these facts mean?

- Friend might not have seen the text or me
- Friend might be distracted by something
- Friend might be dealing with something personal
- Friend might have other plans

6. Say: So "my friend is ignoring me" is weakly supported—there are many other interpretations that fit the facts just as well or better.

YOU DO: INDEPENDENT PRACTICE

1. Say: Now try one on your own. Use both steps: catch it, then evaluate it.

Statement: This math problem is impossible.

Prompts if needed:

- Can you observe "impossible"? What are the facts?
- What facts support this interpretation?
- What other interpretations fit the facts?

2. Say: After independent work, briefly discuss:

- Is "impossible" an observation or an interpretation?
- What might the actual facts be?
- What facts support "impossible"?
- What other interpretations fit the facts?

The Two-Question Framework

1. Say: When you catch an interpretation, use these two questions to evaluate it:

Write or read with your learner

1. What facts support this interpretation?
2. What else could these facts mean?

2. Say: Strong interpretations are supported by facts. Weak interpretations ignore facts or have many other explanations that fit just as well.

Practicing This Skill

Watch for these moments:

- When you think you know why someone did something.
- When you are telling a story about what happened.
- When you feel upset or confused by someone's behavior.
- When someone tells you "this is what it means."

Every time you pause and use this process, you're practicing the skill.

Lesson 6

Activity 2: The Imagination Trap – When Stories Become "Truth"

Objective: Recognize when imagination quietly becomes treated as fact, and understand the consequences

Metacognitive Review

1. Ask: In Activity 1, you said that a belief without facts is more like imagining than knowing. What happens if you forget that? If you start treating an imagined belief as if it is definitely true?

PR: *You might make decisions based on something that is not real.*

2. Say: That is the imagination trap. Your brain takes a belief or 'story in your head' that has no evidence yet and quietly upgrades it from imagining to 'I know this.' Today, you will practice spotting that shift and asking the same question from Lesson 2: 'Where's the evidence?' before you act on it.

Introduce the Trap

1. Say: The imagination trap happens when you:

- Generate a story in your head (which is normal and useful)
- Forget that it is a story
- Start treating it as proven truth
- Act on it as if it is fact

2. This happens in three common ways: (Discuss these, asking your learner if they ever do these.)

- **Imposter syndrome:** I don't really belong here. I'm not actually good at this.
- **Worst-case scenario:** Everything will go wrong. It will be a disaster.
- **Social suspicion:** 'They definitely think X about me' or 'They are doing that on purpose to hurt me.'

3. Say: These start as stories in your head, but they can feel like facts.

Scenario 1: Imposter Syndrome

1. Read and discuss each scenario.

Scenario: Kate has been doing a weekly coding club for a year. She has built several small games and she has been invited to join a more advanced online coding workshop because of her progress. Kate's thought: 'They made a mistake. I'm not that good at coding. Everyone will realize I do not belong there.'

Discussion prompts:

2. **Ask:** What does Kate actually know in this situation?

PR: *She has finished projects; she's been consistent; the person who runs the club saw her work and invited her.*

3. **Ask:** What is the story in her head?

PR: *"They made a mistake," "I'm not good," "I do not belong."*

4. **Ask:** What happens if Kate treats her story in her head as truth?

PR: *She might refuse to join, not try hard, or quit quickly and miss a real opportunity.*

5. **Ask:** If Kate used the Lesson 2 question 'Where's the evidence?', what evidence could she look at?

PR: *Her past projects, feedback from parent/mentor, her improvement over time.*

6. **Say:** Her 'I do not belong' thought is imagination—a belief without evidence right now. It is okay as a feeling, but it is not knowledge until she checks it.

Scenario 2: Worst-Case Scenario

Scenario: Next week, Joe is invited to share a short project at his co-op. He has shared projects before; some went well, some were just okay. Joe thinks: 'I'm going to forget everything. Everyone will think it's terrible. It will be a complete disaster. I should just say I'm sick and not go.'

Discussion prompts:

1. **Ask:** What does Joe actually know?

PR: *He has presented before; some went fine; he has time to prepare; nobody has laughed at him in the past.*

2. **Ask:** What is the story in his head?

PR: "I will forget everything," "Everyone will think it's terrible," "It will be a disaster."

3. Ask: Why might his brain jump to the worst-case story?

PR: His brain tries to protect him from embarrassment and overestimates the danger.

4. Ask: If he treats this worst-case story as truth, what might he do? What might he miss out on?

PR: Avoids presenting, loses experience, never discovers what actually happens.

5. Ask: What could Joe do to reality-check his story?

PR: Prepare carefully, remember previous experiences, ask someone he trusts for feedback, notice there is no evidence that everyone will laugh.

Scenario 3: Social Suspicion

Scenario: Sam is at the park when he sees two kids from his co-op talking near the swings. When Sam starts walking toward them, they suddenly stop talking and glance at each other. Sam thinks: "They were talking about me. They must not want me here."

Discussion prompts:

1. Ask: What does Sam actually know in this situation?

PR: Two kids were talking. When Sam approached, they stopped. Nothing more.

2. Ask: What is the story in his head?

PR: "They were talking about me," "They don't want me here," "They were saying something negative."

3. Ask: What might Sam feel and do if he treats that story as true before he knows more?

PR: Feel hurt, nervous, or embarrassed; decide not to join them; walk away; or act distant—all based on something he imagined.

4. Say: Sam's brain assumed that if kids stop talking, it must be about him—and probably something bad. That is an assumption, a hidden belief from Lesson 3.

5. Ask: What would be a better approach? What could Sam do instead when he notices his thinking that 'They were talking about me'?

PR: Ask, "What do I actually know?" or "Where's the evidence?" He might join them and see how they respond, or wait until he knows more instead of assuming his story is true.

REFLECTION

1. Say: In each of these situations, a story in someone's head felt very real, but it was still imagination, a belief without evidence. Critical thinkers:

- notice the story,
- separate it from what they actually know,
- and then decide what to do after checking for evidence.

Lesson 6

Activity 3: Real-World Application – Darwin's Finches

Objective: Understand how scientists use imagination deliberately to generate hypotheses, then test them

Metacognitive Review

1. Ask: When your brain imagines a possible explanation, is that something you know for sure or a story in your head, a hypothesis?

AR: *A story in my head / hypothesis.*

2. Say: In this activity, you will see how scientists do the same thing on purpose. They use their imagination to create a hypothesis, a story in their head about why something happens—but they do not treat it as knowledge until they test it to find evidence.

Real-World Connection

1. Say: Scientists use imagination all the time. But they do it strategically:

- OBSERVE something interesting (facts)
- IMAGINE possible explanations (stories in their head)
- LABEL those explanations as hypotheses (not proven yet)
- TEST them systematically
- REVISE based on what they find

2. Connect to L5: This is the testing cycle you learned in L5. The INFER step is where scientists use imagination to generate possible explanations. But they never forget that inferences are 'stories in their head' until they test them.

Darwin's Finches

1. Say: In 1835, Charles Darwin visited the Galápagos Islands. He observed finches—small birds—on different islands. He noticed something interesting. *Show the image (Appendix).*

What Darwin observed:

- Finches on different islands had different beak shapes
- Some had large, thick beaks
- Some had long, thin beaks
- Some had medium-sized beaks

- The islands had different food sources available

2. Ask: At this point, what did Darwin know?

PR: *He knew what he observed: different beak shapes on different islands with different foods.*

3. Say: Darwin started to imagine a possible explanation. In his head he thought something like:

- What if the beak shapes are related to the food on each island?
- What if finches with beaks that fit the food survive better and have more babies, so over many generations the finches' beaks change?

4. Ask: Is that something he knew for sure, or is that a story in his head, a hypothesis?

AR: *It's a hypothesis (story in his head) at this point.*

5. Say: Darwin did not just decide his idea was true. He treated it as a hypothesis and asked: If my story is right, what would I expect to see?

He predicted:

- Thick-beaked finches should mostly eat hard seeds.
- Thin-beaked finches should mostly eat insects or soft foods.

Then he watched what different finches actually ate. What he observed matched his predictions. Over time, with more evidence, this imaginative hypothesis became a well-supported scientific theory.

Discussion points:

- Where do you see what he knew (observations)?
- Where do you see 'story in his head' (hypothesis)?
- What might have gone wrong if he treated his story as already true without testing it?

Use Your Imagination to Form a Hypothesis

1. Say: Let's try a simpler science situation. You notice that your phone battery (or tablet/laptop) is draining much faster than it used to, even though you use it about the same amount.

2. Ask: What do you actually know?

AR: *Battery drains faster, same device, similar use time.*

3. Say: Now use your imaginative thinking to form a hypothesis: What is one possible story in your head that could explain why the battery is draining faster?

Let them try on their own first.

Help if needed – three possible hypotheses:

- A. The battery is getting older and cannot hold as much charge as before.
- B. Someone secretly hacked my device just to drain my battery.
- C. The weather changed this week, so batteries everywhere no longer work.

If they get stuck, read these three and ask:

- Which of these is the strongest hypothesis, most reasonable and easiest to test?
- What prediction could you make to test it?

Guide toward: A is clearly better than B or C (more plausible, matches what often happens, easier to check by looking at battery health/settings), but the key move is: labeling each as a story in my head, then thinking about how to test the strongest one.

Practice Challenge

Practice spotting your 'story in my head':

- When your brain jumps to explain someone's behavior: Do I know this, or am I imagining the reason?
- When a thought pops up that feels instantly true: What part is fact, and what part is my brain filling in?
- When you start assuming what someone meant, felt, or intended: Did I actually see that happen?
- When you feel yourself slipping into the Imagination Trap: What could I check that would tell me whether my story is right?
- When your brain keeps repeating a story even without evidence: This is a story—I need proof before I treat it as knowledge.

Lesson 8

Activity 2: Persuasive Techniques

Objective: Learn to identify specific techniques used to persuade and influence

Metacognitive Review

1. Ask: What does SIFT stand for, and why do fact-checkers read laterally instead of vertically?

AR: *Stop, Investigate the source, Find other coverage, Trace claims. Fact-checkers read laterally because an untrustworthy source will not tell you it is untrustworthy - you have to check what other sources say.*

2. Say: Lateral reading helps you check whether claims are true. But people also use specific techniques to influence your emotions and bypass your thinking. Today, you will learn to identify these techniques by name so you can recognize them when you see them.

Introduce Persuasive Techniques

1. Say: A persuasive technique is a specific strategy used to convince or influence. The goal is not to reject all persuasion - people persuade others to exercise, to be kind, to try new things. The goal is to recognize when you are being persuaded so you can make an informed choice instead of being manipulated without realizing it.

You already know one persuasive technique from Lesson 7: false causation. When an ad says "I used this product and then I got better," that is a causal claim. And you know to ask: Is there a mechanism?

2. Say: Today, you will learn four more techniques. Combined with false causation, you will have five tools for recognizing persuasion.

Technique 1: Emotional Appeal

Write or read with your learner

EMOTIONAL APPEAL = Targets your feelings so you react instead of think

1. Say: Emotional appeals go after feelings like fear, excitement, insecurity, or the desire to belong. The goal is to make you feel something strongly so you act on that feeling before thinking it through.

2. Examples to discuss:

- Do not be the only one left out.
- You deserve better than what you have.
- Imagine how confident you will feel.
- Stop settling for less.

3. Ask: What emotions are these targeting?

PR: *Fear of missing out, insecurity, desire for confidence, dissatisfaction with current situation.*

4. Say: When you read something on social media ask yourself: Is this trying to make me feel something instead of giving me information?

Technique 2: False Scarcity

Write or read with your learner

FALSE SCARCITY = Creates fake urgency by claiming limited time or supply

1. Say: False scarcity makes you feel like you need to act NOW. Your brain hates missing opportunities, so this technique pushes you to decide fast instead of thinking carefully.

2. Examples to discuss:

- Only 3 left in stock!
- This deal expires in 24 hours.
- Once they are gone, they are gone forever.
- Limited drop - will not restock.

3. Ask: How can you tell if scarcity is real or manufactured?

PR: *Check other sites, wait and see if the "limited" item is still available later, notice if the countdown resets, ask whether the urgency benefits you or the seller.*

4. Say: When you see this technique being used, you can investigate to learn if it is really scarce, or if the urgency is being made up to make you act fast.

Technique 3: Bandwagon

Write or read with your learner

BANDWAGON = Suggests everyone is doing it, so you should too

1. Say: Bandwagon appeals use your social nature against you. Humans want to belong and do not want to be left behind. This technique makes you feel like you are missing out on something everyone else already has or is doing.

2. Examples to discuss:

- Join 10 million players.
- Everyone is switching to this.
- The internet is obsessed with this right now.
- Do not be the last person to try it.

3. Ask: Why is "everyone is doing it" not actually a good reason to do something?

PR: Popularity does not equal quality or value. Millions of people can be wrong. What works for others might not work for you. Numbers can be exaggerated or fake.

4. Say: When you see this technique being used, you can ask: Is "everyone doing it" actually a reason to do it? Do the number of likes or shares mean it is something I want to belong to?

Technique 4: Testimonial

Write or read with your learner

TESTIMONIAL = Uses someone's personal story as if it were proof

1. Say: Testimonials feel convincing because stories are powerful. But one person's experience does not prove something works for anyone except that one person. Think about it. Companies choose which testimonials to show you. They pick the best stories and hide the people for whom the product did nothing.

2. Examples to discuss:

- This controller changed my game completely.
- I went from bronze to platinum in two weeks.
- I have never felt more confident.
- Before and after photos or stats.

3. Ask: How does this connect to what you learned in Lesson 7?

PR: A testimonial is a causal claim. "I used X and Y happened" is correlation, not proof of causation. You would ask: Is there a mechanism? Could something else explain the improvement?

4. Say: When you see this technique being used, you can ask: Is this one person's story, or actual evidence? Why was THIS testimonial chosen to show me?

Connecting the Techniques

1. Say: These four techniques plus false causation from Lesson 7 give you five tools for recognizing persuasion. Let me show you how they often appear together.

2. Read: Instagram post from a gaming accessories account: "The HyperX Pro controller is taking over. Over 2 MILLION sold and the reviews are insane. 'I literally ranked up twice in one week after switching' - @ProGamerMike. We only have 200 left from this shipment and they are going FAST. If you are serious about improving, this is it. Do not get left behind while everyone else levels up. Link in bio."

3. Discuss:

- Where is the bandwagon? ("2 MILLION sold," "everyone else levels up," "taking over")
- Where is the testimonial? (@ProGamerMike quote about ranking up)
- Where is the false scarcity? ("only 200 left," "going FAST")
- Where is the emotional appeal? ("if you are serious," "do not get left behind")
- Where is the false causation? (The testimonial claims the controller caused the rank improvement - is there a mechanism for that?)

4. Ask: How many techniques did they layer into one short post?

AR: All five. This is common. Persuaders layer techniques because each one increases the chance something will work on you.

Teacher Note: Story Connection Sections

Each lesson in this course includes a short story designed to show the target skill in use before learners are asked to practice it themselves. These stories serve as worked examples of critical thinking in everyday situations.

Lesson 9

Activity 4: Story Connection – The Skateboard Investigation

Objective: See evidence evaluation, hypothesis testing, and fair decision-making applied in realistic situations

Before Reading

1. Say: You are going to read a story about Nadia, whose bike goes missing. As you read, notice:

- What happens when Nadia jumps to a conclusion without evaluating evidence?
- How does her mom teach her to evaluate evidence systematically?
- How does Nadia apply what she learned to other situations?

Read the Story

1. Read the story from Lesson 9 in the Student Workbook.

After Reading – Choose one approach:

Option A: Written Reflection

1. Give your learner time to complete the written reflection in the workbook.

Option B: Discussion

1. Say: Now let us talk about the story.

2. Choose 3-4 discussion questions from the workbook to discuss together.

THE SKATEBOARD INVESTIGATION

A Story About Evidence Evaluation

Nadia was finishing breakfast on Saturday morning when someone knocked hard on the front door.

Her mom opened it to find Mr. Thompson from down the street. He looked angry.

"I need to talk to you about your daughter," he said. "She and her skateboard friends made a huge mess at Riverside Park last night. There is trash everywhere. It's disgraceful."

Nadia came to the door. "What? I didn't—"

"I know you were there," Mr. Thompson said. "You skateboard at that park all the time. Someone needs to clean that mess up."

Nadia felt her face get hot. "I was at the park yesterday, but I didn't—"

Her mom held up a hand. "Mr. Thompson, thank you for letting us know about the mess. That does sound like a problem. But before we accept responsibility, we should look at the evidence. How do you know Nadia made the mess?"

Mr. Thompson frowned. "Everyone knows those skateboarders hang out there. And I saw a woman this morning who found the mess. She said skateboarders were there."

"Did she see the skateboarders make the mess?" her mom asked.

"Well... I don't know. But who else would do something like that?"

"That's what we should find out," her mom said. "Nadia, get your shoes. Mr. Thompson, would you like to come with us to look at the evidence?"

At Riverside Park, they found the mess near the picnic area. Trash was scattered across the grass: torn garbage bags, food wrappers, banana peels, empty containers.

A woman in running clothes was talking to a park employee nearby. Mr. Thompson pointed to her. "That's the woman I talked to this morning. She found the mess."

Nadia's mom approached her. "Excuse me. I understand you discovered this mess this morning?"

The jogger nodded. "I run through here every morning around 6 AM. I came around the corner and saw all this trash everywhere. And those skateboarders were already here." She pointed toward the skate area where a few kids were practicing. "They're always here making noise. They must have done this."

"Did you see them make this mess?" Nadia's mom asked.

The jogger paused. "Well, no. The mess was already here when I arrived. But they were here."

Nadia's mom turned to Nadia. "Let's evaluate the evidence we have so far. Mr. Thompson, you said Nadia made the mess. What is your evidence?"

Mr. Thompson shifted. "I know she skateboards here. And this woman said skateboarders were here."

"So, your evidence is secondhand," her mom said. "You didn't witness anything yourself. You heard from someone else that skateboarders were present. Is that correct?"

"I suppose so."

Her mom turned to the jogger. "And you discovered the mess at 6 AM. The skateboarders were already here, but you did not see anyone actually scatter this trash. Is that correct?"

The jogger crossed her arms. "No, but it's obvious—"

"Let's not jump to an interpretation yet," Nadia's mom said. "You made a firsthand observation: trash was scattered, and skateboarders were present. But the interpretation that skateboarders caused the mess, that's a hypothesis. It needs to be tested, not just accepted."

Nadia spoke up. "I was here last night skateboarding with my friends. We left around 8 PM. There was no mess. The trash cans were fine."

The jogger looked skeptical. "You're just saying that because you're in trouble."

"That's a fair concern," Nadia's mom said. "Let's evaluate Nadia's account. Nadia, is your statement firsthand?"

"Yes. I was here. I saw the trash cans when we left."

"Can anyone verify that?"

Nadia pulled out her phone. "My friend Jaylen posted a video of us skating last night. You can see the picnic area in the background." She found the video and showed it. The trash cans were visible, intact, bags not torn.

"What time was this posted?" her mom asked.

"7:47 PM."

Her mom nodded. "So, we have verifiable evidence that at 7:47 PM, the trash was not scattered. And the mess was discovered at 6 AM. Something happened between 7:47 PM and 6 AM."

"The skateboarders could have come back later," the jogger said.

"That's another hypothesis," Nadia's mom agreed. "Let's look at the physical evidence and see which hypothesis it supports."

They walked closer to the scattered trash. Nadia's mom crouched down and looked carefully.

"What do you notice about how this trash is scattered?" she asked Nadia.

Nadia looked. The bags were torn open, not untied. Food waste was spread around, but paper and plastic items were mostly left alone. "It looks like something was digging for food. The food scraps are pulled out, but the other stuff is just... pushed aside."

"Good observation. What else?"

Nadia looked more closely. In the soft dirt near one of the torn bags, she saw prints. "Are those... paw prints?"

Her mom nodded. "They look like raccoon prints. And look at the bags themselves."

Nadia examined a torn bag. There were small punctures and ragged tears, not the kind of rip a person would make, but scratches and bites.

"Claw marks," Nadia said.

"So now we have physical evidence," her mom said. "Let's evaluate it. Is this firsthand evidence?"

"Yes. We're looking at it directly."

"Is it verifiable?"

"Yes. Anyone can see the prints and claw marks."

"Is it consistent with the hypothesis that skateboarders made this mess?"

Nadia shook her head. "No. Skateboarders don't have claws. And why would we tear open bags with our teeth to get at banana peels?"

"What hypothesis does this evidence support?"

"That animals got into the trash. Probably raccoons."

Her mom stood up and turned to the jogger and Mr. Thompson. "Let's look at all the evidence together. Mr. Thompson, you had secondhand information. You heard from someone that skateboarders were present. That's weak evidence. It doesn't tell us who made the mess.

"Ma'am, you had firsthand observation of the mess and of skateboarders being present. But you did not witness the mess being made. Your conclusion that skateboarders did it was an interpretation, an assumption based on your existing opinion about skateboarders, not based on evidence that they did this.

"Nadia has firsthand evidence that the mess was not present at 7:47 PM, verified by a timestamped video.

"And the physical evidence, paw prints, claw marks, the pattern of torn bags and scattered food, is consistent with raccoons and inconsistent with human activity."

The jogger looked at the claw marks on the bag, then at the paw prints. "I... didn't look that closely. I saw the mess, I saw the skateboarders, and I assumed..."

"You jumped to an interpretation without evaluating whether the evidence actually supported it," Nadia's mom said. "That's easy to do. We all do it sometimes. The problem is when we treat our assumptions as facts."

Mr. Thompson cleared his throat. "I owe you an apology, Nadia. I was so sure it was you kids. I didn't even question it."

"It's okay," Nadia said. "You were working with the information you had. It just wasn't complete information."

"That's generous of you," her mom said. "And it's an important point. Mr. Thompson wasn't lying. The jogger wasn't lying. They were both making honest observations and honest mistakes. But they let their existing beliefs about skateboarders fill in gaps that the evidence didn't actually support."

That afternoon, Nadia met up with her friends Jaylen, Maya, and Chris at the basketball court. She told them about what happened at the park.

"That's so unfair," Maya said. "They just blamed you because you skateboard?"

"Pretty much," Nadia said. "But my mom showed them how to actually evaluate the evidence, and they realized they were wrong."

"Your mom sounds cool," Chris said.

They played basketball for a while, a casual two-on-two game, Nadia and Maya against Jaylen and Chris. After about an hour, they took a break.

"Where's my water bottle?" Jaylen said, looking around the bench where they'd left their stuff.

"I don't know," Chris said. "I saw it there earlier."

Jaylen looked at the bench. His bag was there, Maya's bag was there, Nadia's bag was there. Chris's bag was there. But no water bottle.

"Someone took it," Jaylen said. He looked around the court. A few other people were shooting hoops at the far end, people none of them knew.

"Maybe those guys took it," Chris said.

"Why would they take my water bottle?" Jaylen asked. But he was frowning in their direction.

Nadia thought about what had happened that morning. "Wait. Before we assume someone took it, let's look at the evidence. What do we actually know?"

Jaylen looked at her. "I know my bottle was here, and now it's gone."

"Okay, that's a fact—a firsthand observation. But 'someone took it' is an interpretation. What else could explain the bottle being gone?"

"Maybe it fell somewhere?" Maya suggested.

They looked around the bench. No bottle underneath or behind it.

"Maybe one of us moved it by accident?" Nadia said.

"I didn't touch it," Chris said.

"I didn't either," Maya said.

Nadia looked at the bags on the bench. "Wait. Jaylen, which bag is yours?"

"The blue Nike one."

Nadia looked at Chris's bag. It was also a blue Nike bag—almost identical.

"Jaylen, did you get anything out of your bag during the break?"

Jaylen thought. "Yeah, I grabbed my phone to check the time."

"Did you open Chris's bag by mistake?"

Jaylen looked at the two bags. "I... maybe? They look exactly the same." Chris opened his bag and looked inside. "Oh." He pulled out a water bottle. "This isn't mine. I don't even have a water bottle."

Jaylen laughed. "I put my water bottle in your bag! I didn't even realize! I must have opened the wrong bag and just shoved it in without thinking."

"So nobody took it," Nadia said. "It was an honest mistake. The bags look identical, and you put it away without really looking."

"I was ready to blame those random guys," Jaylen admitted. "I had no evidence they did anything. I just assumed because they were strangers."

"That's exactly what Mr. Thompson and the jogger did this morning," Nadia said. "They saw skateboarders and assumed we made the mess. You saw strangers and assumed they took your bottle. But the evidence didn't actually support those conclusions."

Maya nodded. "We should probably check the evidence before we accuse people."

"That's what my mom kept saying," Nadia said. "Fair decision-making means evaluating evidence by its quality, not just going with your first assumption. Even if you really think you know what happened, you have to be honest about whether the evidence actually supports it."

Walking home that evening, Nadia thought about everything that had happened. Two situations in one day where people jumped to conclusions without good evidence.

Mr. Thompson and the jogger had blamed skateboarders because of their existing opinions, not because of what they actually witnessed. Jaylen had almost blamed strangers for the same reason.

Both situations had simple explanations that had nothing to do with the people being blamed. Raccoons. Identical bags. But nobody would have found those explanations if they'd just accepted their first assumption.

Nadia realized that evaluating evidence fairly wasn't just about solving mysteries. It was about being fair to people. When you jumped to conclusions without evidence, you could hurt people who didn't do anything wrong.

She thought about the Evidence Quality Framework her mom had walked them through:

Source reliability—who is giving this information and are they in a position to know?

Directness—is this firsthand, secondhand, or further removed?

Verifiability—can this be checked?

Consistency—does it match other evidence?

Completeness—what might be missing?

These weren't just abstract questions. They were tools for being fair. For making sure you didn't blame someone based on assumptions instead of evidence.

Nadia decided she would try to remember that. Not just for big accusations, but for everyday situations. Before she decided what happened, she would ask herself: What do I actually know? What am I assuming? And does the evidence really support my conclusion?

Because everyone deserved to be judged on evidence, not assumptions.

Teacher Note: Why This Story?

In this story, learners see how assumptions lead to incorrect conclusions, how evidence varies in quality, and how careful evaluation can change an outcome. The story includes two scenarios, 1. the park investigation (guided by an adult) and 2. the water bottle incident (handled by peers). In that way, learners see the same skill applied in different contexts. The focus is not on blame or debate, but on fairness and accuracy. The question in the workbook encourage learners to notice when characters shift from believing to knowing, when interpretations replace observations, and when conclusions are revised based on better evidence.

These stories provide a shared reference point for discussion and practice. By seeing the skill applied in context, learners are better prepared to recognize and use the same thinking moves in their own lives.

Lesson 10

Activity 4: Listening and Responding to Others' Reasoning

Objective: Learn to understand someone else's reasoning before responding to it

Metacognitive Review

1. Ask: You have practiced building your own reasoning chains. What might go wrong if you respond to someone's reasoning without first making sure you understand it?

PR: *You might argue against something they did not actually say. You might miss the real point of disagreement. They will feel unheard, which damages the conversation. You cannot evaluate reasoning YOU DO: INDEPENDENT PRACTICE not understand.*

2. Say: Strong critical thinkers do not just construct good reasoning—they also listen carefully to others' reasoning before responding. This activity teaches you how.

The Listening Framework

Write or read with your learner

BEFORE YOU RESPOND

1. LISTEN for their reasoning chain
 - What is their position?
 - What evidence are they offering?
 - What is their reasoning (the bridge)?
 - What uncertainty do they acknowledge?
2. CHECK your understanding
 - "So you're saying... because... Is that right?"
 - Do not assume—verify
3. IDENTIFY the real disagreement
 - Do you disagree with their evidence?
 - Do you disagree with their reasoning?

- Do you have different values or priorities?
- Do you have different information?

4. THEN respond to their actual argument

1. Say: Most people skip straight to responding. They hear the position and start arguing without understanding the reasoning. This leads to people talking past each other.

Why This Matters

1. Say: There are only a few reasons people disagree:

- **Different evidence:** You have information they do not, or vice versa
- **Different reasoning:** You interpret the same evidence differently
- **Different values:** You prioritize different things
- **Misunderstanding:** You are not actually disagreeing—you just think you are

2. Say: You cannot identify which kind of disagreement you have until you understand their reasoning. And you cannot understand their reasoning if YOU DO: INDEPENDENT PRACTICE not listen for it.

Practice: The Hot Seat

1. Say: We are going to practice this with the Hot Seat. Here is how it works:

- One person explains their reasoning on a topic (1-2 minutes)
- The other person listens, then checks understanding before responding
- Then you discuss
- Switch roles

2. Say: For the Hot Seat, you will practice with topics where reasonable people disagree. The goal is practicing the listening skill, not resolving the disagreement.

Choose topics from this list:

- Is it better to be an only child or have siblings?
- Is it better to live in a city or a rural area?
- Should people be required to vote?
- Is competition good or bad for learning?
- Should zoos exist?
- Is it better to have a few close friends or many casual friends?

- Should kids have set bedtimes or decide for themselves?
- Which is better: summer or winter?

Round 1: Learner Takes the Hot Seat

1. Have your learner choose a topic from the list and state which side they will argue.
2. **Say:** You have 1-2 minutes to explain your reasoning chain. Include your position, evidence, reasoning, and uncertainty.
3. After they finish, check your understanding: "So you're saying [position] because [evidence/reasoning]. Is that right?"
4. Once they confirm you understood, ask 2-3 clarifying questions:
 - What is your strongest piece of evidence?
 - What would change your mind?
 - What are you assuming that you have not stated?
5. Briefly reflect:
6. **Ask:** Which question was hardest to answer?
7. **Ask:** Did any question reveal something you had not considered?

Round 2: Parent/Teacher Takes the Hot Seat

1. Choose a different topic from the list.
2. Explain your reasoning chain (1-2 minutes).
3. Have the learner check their understanding before asking questions: "So you're saying... because... Is that right?"
4. Confirm or correct their summary.
5. Have the learner ask you 2-3 clarifying questions.
6. Model responding honestly:
 - If a question reveals a weakness: "That's a good point—I hadn't considered that."
 - If YOU DO: INDEPENDENT PRACTICE not know: "I'm not sure—that's something I'd need to think about."

REFLECTION

- 1. Ask:** What was harder—explaining your reasoning or listening to someone else's?
- 2. Ask:** What did you learn from checking understanding before responding?
- 3. Ask:** How is being questioned different from being attacked?

Lesson 10

Activity 3: Recognizing Your Own Bias

Objective: Recognize how bias—patterns in how you think that you may not notice—affects reasoning, including your own

Metacognitive Review

1. Ask: In Activity 2, you mapped the Wolf's perspective using position, experience, values, and needs. His version of the story made sense from where he was standing. But here's a harder question: Did the Wolf know he was biased, or did his version just feel like the truth to him?

AR: He probably did not know. His version just felt true to him. He was not lying—he believed his own story.

2. Say: Today, we are looking at bias—what happens when your perspective shapes your reasoning without you realizing it. The Wolf probably believed his own story. That is how bias works. It does not feel like bias from the inside. It just feels like seeing things clearly.

What Is Bias?

1. Say: Bias is not a bad word. Having bias does not mean you are a bad person or a bad thinker. Bias is simply a pattern in how you think—what you notice, what you trust, what you dismiss—that you may not be aware of.

2. Say: Everyone has biases. They come from your experiences, your position, what you've been taught, and what you care about. The question is not whether you have biases. The question is whether you can recognize them.

3. Say: Bias can make you:

- Notice evidence that supports what you already believe
- Miss or dismiss evidence that challenges what you believe
- Assume your perspective is neutral or objective
- Judge others more harshly than you judge yourself or your group

4. Say: It is important to understand we all have biases, because unrecognized bias leads to poor thinking. The most dangerous bias is thinking YOU DO: INDEPENDENT PRACTICE not have any.

Bias in Action: The Animal Problem

1. Say: Let's look at how bias works with a real example that affects decisions in the world.

2. Ask: Which animals do you think get the most protection, the most conservation funding, and the most public support? What kinds of animals come to mind?

PR: *Pandas, elephants, tigers, whales, puppies, dolphins, animals that are large, cute, or familiar.*

3. Say: Now here are some facts.

- Snakes and spiders are far more endangered as groups than pandas or elephants.
- Many snake and spider species are critical to ecosystems: controlling pests, pollinating plants, maintaining food chains.
- But snakes and spiders receive a tiny fraction of conservation funding compared to mammals.
- When researchers studied which animals people want to protect, appearance mattered more than ecological importance or actual endangerment.

4. Ask: Why do you think that is? Why do pandas get more protection than snakes?

PR: *We find pandas cute and snakes scary. We feel an emotional connection to animals with big eyes and fur. Fear and disgust shape our response to snakes and spiders. These emotional reactions are not based on evidence about which animals need help or which animals matter to ecosystems.*

5. Say: This is bias in action. Our emotional response—not evidence—shapes what we think deserves protection. And most people do not realize they are doing it. It does not feel like bias. It feels like pandas obviously matter more.

6. Ask: What is the problem with this bias? What are the consequences?

PR: *Species that need protection do not get it. Ecosystems suffer. Decisions get made based on feelings rather than evidence.*

Bias in Action: The Place You Are From

Teaching Note: This example examines how where we are from shapes our thinking. It uses patriotism as a clear illustration of position-based bias. If this topic feels uncomfortable for your family, you may skip to the Confirmation Bias section. The animal example above covers the core concept.

1. Say: Here is another kind of bias—one based on position rather than emotional response.

2. Ask: If two countries are in a conflict, and one of them is your country, whose side do you automatically understand better? Whose actions seem more justified?

3. Say: Most people—in every country—tend to see their own country's actions as more reasonable and other countries' actions as more suspicious. This is not because people have examined the evidence and concluded their country is right. It is because of where they were born.

4. Ask: Is where you were born a good reason to believe your country is more justified than others?

PR: No. Where you happened to be born is random. It is not evidence of anything. But it powerfully shapes what feels true to you.

5. Say: This is position-based bias. Your position—being from a particular place—shapes what seems normal, what seems justified, and whose perspective you automatically understand. It happens in every country, to people on all sides.

Discuss with the questions:

- Does this type of patriotism feel like bias or like clear thinking?
- You are surrounded by people who share this same bias. How does that shape the likelihood of you recognizing it as bias?
- Would it feel disloyal or uncomfortable to question this?

6. Say: Recognizing this bias does not mean you have to reject your country or think it is always wrong. It means you notice that your position shapes your perspective and you try to evaluate evidence honestly rather than assuming your side is automatically right.

Why Biases Stick: Confirmation Bias

1. Say: You have now seen two types of bias: emotional bias toward cute animals, and position-based bias toward your own country. But here is a question: Why do these biases persist? Once you have them, why don't they just go away when you encounter evidence against them? The answer is confirmation bias. Confirmation bias is the pattern that keeps other biases in place. It works like this: once you believe something, your brain starts filtering information to protect that belief.

2. Ask: Let's go back to the animal example. Imagine someone who feels that pandas deserve more protection than snakes. What happens when they encounter information about how important snakes are to ecosystems?

PR: *They might dismiss it. "That is just one study." They might not notice it at all. They might think "But pandas are still more important." They might remember every snake bite story and forget the ecosystem information.*

3. Say: That is confirmation bias. The emotional bias created the belief. Confirmation bias protects it.

4. Ask: Now apply this to the patriotism example. If someone believes their country's actions are usually justified, what happens when they encounter evidence that their country did something wrong?

PR: *They might dismiss the source. "That is biased reporting." They might find excuses. "The situation was complicated." They might remember times their country was right and forget times it was wrong. They might notice other countries doing the same thing and judge them more harshly.*

5. Say: Same pattern. Position-based bias created the belief. Confirmation bias protects it.

6. Say: What makes confirmation bias so hard to notice is that it does not feel like filtering. It feels like you are just seeing reality clearly. The information that supports your belief feels obviously true. The information that challenges it feels obviously flawed. This is why the Wolf believes his own story. He has biases—self-interest, wanting to look good, feeling victimized. And confirmation bias protects those biases by making his version feel like the obvious truth.

The Test

1. Say: I have a question that can help you spot a type of confirmation bias many of us have.

2. Ask: Is there a school subject—or any skill—that you have decided you are bad at?

3. Ask: When you struggle with that subject, what do you think?

PR: *"See? I knew I was bad at this." "This proves it." "I will never get this."*

4. Ask: When you succeed at that subject—get a good grade, understand something, do well—what do you think?

PR: *"That was easy." "I got lucky." "That does not really count."*

5. Say: Notice the pattern. Struggles confirm the belief. Successes get explained away. That is confirmation bias protecting the belief "I am bad at this."

6. Ask: Now think of a subject or skill you believe you are good at. When you struggle, how do you interpret it?

PR: *Struggles: "This is hard but I will figure it out."*

7. Ask: What about when you succeed?

PR: *"See? I am good at this."*

8. Say: The belief shapes what the evidence seems to mean.

9. Ask: Now try another one. Is there a person who you find annoying?

PR: *Let them identify someone if comfortable.*

10. Ask: When that person does something annoying, what do you think?

PR: *"See? They are so annoying." "Typical."*

11. Ask: When that person does something kind or helpful, what do you think?

PR: *"That does not change anything." Or maybe they might not notice it at all.*

12. Say: Same pattern. Confirmation bias filters what you notice and how you interpret it—all to protect the belief you already have.

13. Ask: Knowing this, what could YOU DO: INDEPENDENT PRACTICE differently?

PR: *Actively look for evidence against my belief. Notice when you are explaining away information. Ask yourself: "Would I interpret this the same way if I believed the opposite?"*