

# 30 Think-First *Bell Ringers*

Six weeks of five-minute warm-ups that build the thinking habits AI can't replace: thought experiments, logic, estimation and smart questions about AI itself. Project them or print them as half sheets.

GRADES 5-12

5 MINUTES A DAY

6 WEEKS

NO DEVICES

---

## WHAT'S INSIDE

- How to use + routine
- A daily theme for each weekday
- Teacher notes & answers
- 30 prompts, 2 per page
- Weekly response sheet
- Terms of use

THE ROUTINE

Five minutes. *Pencils only.*

- 1

Project or hand out the day’s prompt as students walk in.
- 2

Three silent minutes. Everyone writes before anyone talks.
- 3

Two minutes to share. Cold-call two or three students, or use turn-and-talk.
- 4

Collect on Friday. Use the weekly response sheet. It’s a growing record of each student’s own thinking.

The weekly rhythm

| DAY | THEME                     | THINKING HABIT                             |
|-----|---------------------------|--------------------------------------------|
| Mon | Thought experiment        | Reason without an answer key               |
| Tue | Logic puzzle              | Slow, careful thinking beats fast guessing |
| Wed | Would AI know?            | How AI works and where it fails            |
| Thu | Estimate it               | Estimate before you calculate (or ask)     |
| Fri | Human, machine or ethics? | Spot AI work, and weigh right and wrong    |

**Why bell ringers?** Short daily practice builds habits. These prompts train exactly what students need to work well with AI: asking good questions, estimating, catching tempting wrong answers, and reasoning when there’s no answer key.

“There’s no AI for the first five minutes of class. This is where your own brain warms up.”

WEEK 1 • MON

THOUGHT EXPERIMENT

If a robot paints a picture all by itself, who is the artist: the robot, the person who built it, or nobody? Defend your answer in two sentences.

MY THINKING

---

---

---

---

WEEK 1 • TUE

LOGIC PUZZLE

Ava, Ben and Cal each have one pet: a cat, a dog or a fish. Ava is allergic to fur. Ben's pet can't climb trees. Who has which pet?

MY THINKING

---

---

---

---

WEEK 1 • WED

WOULD AI KNOW?

An AI was trained only on books written before 1990.  
Name three things it wouldn't know about.

MY THINKING

---

---

---

---

WEEK 1 • THU

ESTIMATE IT

Estimate: how many words do you speak in one day?  
Show your math.

MY THINKING

---

---

---

---

WEEK 1 • FRI

HUMAN, MACHINE OR ETHICS?

“The sunset bled orange into the quiet lake.” Could an AI have written this? How would you know?

MY THINKING

---

---

---

---

WEEK 2 • MON

THOUGHT EXPERIMENT

You can ask a perfect AI one question about the future. What do you ask? Could the answer be dangerous to know?

MY THINKING

---

---

---

---

WEEK 2 • TUE

LOGIC PUZZLE

A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?

MY THINKING

---

---

---

---

WEEK 2 • WED

WOULD AI KNOW?

Why might an AI be great at chess but terrible at folding laundry?

MY THINKING

---

---

---

---

WEEK 2 • THU

ESTIMATE IT

Estimate: how many times does your heart beat in one day?

MY THINKING

---

---

---

---

WEEK 2 • FRI

HUMAN, MACHINE OR ETHICS?

Should AI be allowed to grade essays? Give one benefit and one risk.

MY THINKING

---

---

---

---

WEEK 3 • MON

THOUGHT EXPERIMENT

If you could upload all your memories into a computer, would the computer be you?

MY THINKING

---

---

---

---

WEEK 3 • TUE

LOGIC PUZZLE

What comes next? 2, 6, 12, 20, 30, --

MY THINKING

---

---

---

---

WEEK 3 • WED

WOULD AI KNOW?

An AI states a false fact with total confidence. Why doesn't confidence equal correctness? Give a human example too.

MY THINKING

---

---

---

---

WEEK 3 • THU

ESTIMATE IT

Estimate: how many students could fit in this classroom standing shoulder to shoulder?

MY THINKING

---

---

---

---

WEEK 3 • FRI

HUMAN, MACHINE OR ETHICS?

A company used AI to sort job applications. It learned from 10 years of past hires, who were mostly men. What could go wrong?

MY THINKING

---

---

---

---

WEEK 4 • MON

THOUGHT EXPERIMENT

Is it ever OK to lie to a robot? Is it OK for a robot to lie to you?

MY THINKING

---

---

---

---

WEEK 4 • TUE

LOGIC PUZZLE

Three boxes are labeled Apples, Oranges and Mixed. Every label is wrong. You may take one fruit from one box. Which box should you pick from to fix all the labels?

MY THINKING

---

---

---

---

WEEK 4 • WED

WOULD AI KNOW?

Name something you know that you could never learn just by reading the internet.

MY THINKING

---

---

---

---

WEEK 4 • THU

ESTIMATE IT

Estimate first: how many hours of video are uploaded to YouTube every minute?

MY THINKING

---

---

---

---

WEEK 4 • FRI

HUMAN, MACHINE OR ETHICS?

Should a self-driving car always obey the speed limit, even when every other car is speeding?

MY THINKING

---

---

---

---

WEEK 5 • MON

THOUGHT EXPERIMENT

If an AI perfectly copied your favorite author's style, would the new book be "by" that author? Who should get paid?

MY THINKING

---

---

---

---

WEEK 5 • TUE

LOGIC PUZZLE

It takes 5 machines 5 minutes to make 5 widgets. How long would 100 machines take to make 100 widgets?

MY THINKING

---

---

---

---

WEEK 5 • WED

WOULD AI KNOW?

Write the same request to an AI two ways: one vague, one clear. Which gets a better answer, and why?

MY THINKING

---

---

---

---

WEEK 5 • THU

ESTIMATE IT

Estimate: how many words have you read in your whole life?

MY THINKING

---

---

---

---

WEEK 5 • FRI

HUMAN, MACHINE OR ETHICS?

An AI-made photo of a news event goes viral. List three ways to check whether it's real.

MY THINKING

---

---

---

---

WEEK 6 • MON

THOUGHT EXPERIMENT

Imagine nobody ever needs to write again because AI does it. What would we lose? What would we gain?

MY THINKING

---

---

---

---

WEEK 6 • TUE

LOGIC PUZZLE

A farmer must cross a river with a wolf, a goat and a cabbage. The boat holds her plus one item. Left alone, the wolf eats the goat and the goat eats the cabbage. How does she do it?

MY THINKING

---

---

---

---

WEEK 6 • WED

WOULD AI KNOW?

What's one thing you'd teach an AI so it better understands your community?

MY THINKING

---

---

---

---

WEEK 6 • THU

ESTIMATE IT

Estimate: how much does it cost to charge your phone every day for a year?

MY THINKING

---

---

---

---

WEEK 6 • FRI

HUMAN, MACHINE OR ETHICS?

Finish the sentence: “Before I use AI, I will always...”

MY THINKING

---

---

---

---

Name: \_\_\_\_\_

Week of: \_\_\_\_\_

Class: \_\_\_\_\_

# My week of *thinking*

MON · THOUGHT EXPERIMENT

TUE · LOGIC PUZZLE

WED · WOULD AI KNOW?

THU · ESTIMATE IT

FRI · HUMAN, MACHINE OR ETHICS?

Which prompt made you change your mind, and why?

---

# Teacher notes · weeks 1–3

| PROMPT        | ANSWER OR DISCUSSION NOTES                                                                                                                    |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>W1 Mon</b> | No right answer. Push students to define “artist” first. Is it about intention, effort or skill?                                              |
| <b>W1 Tue</b> | Ava: fish (no fur). Ben: dog (cats climb trees). Cal: cat.                                                                                    |
| <b>W1 Wed</b> | Smartphones, social media, streaming and so on. Introduce “training cutoff”: models only know what was in their data.                         |
| <b>W1 Thu</b> | One study that recorded people’s speech found an average of about 16,000 words a day (Mehl et al., Science, 2007). Ranges were huge.          |
| <b>W1 Fri</b> | You can’t tell from one line. That’s why AI detectors are unreliable, and why we grade the process.                                           |
| <b>W2 Mon</b> | Discuss self-fulfilling predictions and whether knowing the future changes it.                                                                |
| <b>W2 Tue</b> | 5¢ (bat \$1.05). Most people’s fast answer is 10¢. Fast pattern-matching, like an AI’s, can be confidently wrong. Slow down and check.        |
| <b>W2 Wed</b> | Moravec’s paradox: things that are easy for humans (moving, grasping) are hard for machines, and the reverse.                                 |
| <b>W2 Thu</b> | About 70 beats/min × 60 × 24 ≈ 100,000 beats.                                                                                                 |
| <b>W2 Fri</b> | Benefits: speed, consistency, more feedback. Risks: missing creativity, bias, students writing “for the machine.”                             |
| <b>W3 Mon</b> | A classic identity puzzle (like the Ship of Theseus). Ask: what makes you “you”?                                                              |
| <b>W3 Tue</b> | 42. The gaps grow by 2 each time (4, 6, 8, 10, 12). Equivalently, $n \times (n + 1)$ .                                                        |
| <b>W3 Wed</b> | AI predicts likely-sounding words, so tone isn’t evidence. Human examples: a confident rumor, a salesperson.                                  |
| <b>W3 Thu</b> | Room area ÷ about 0.3 m <sup>2</sup> (about 3 sq ft) per person. Compare estimates. Whose method was best?                                    |
| <b>W3 Fri</b> | It may learn to favor men. Amazon reportedly scrapped a recruiting tool for this reason (Reuters, 2018). Biased data leads to a biased model. |

## Teacher notes · weeks 4–6

| PROMPT        | ANSWER OR DISCUSSION NOTES                                                                                                                                           |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>W4 Mon</b> | Compare the two directions. Does it matter if the robot can be harmed? Who programmed the lie?                                                                       |
| <b>W4 Tue</b> | Pick from “Mixed.” It must hold only one kind, so the fruit tells you its contents. The other two labels then follow.                                                |
| <b>W4 Wed</b> | Tastes, smells, how a place feels, a skill in your hands. This is “embodied” knowledge that text-only AI lacks.                                                      |
| <b>W4 Thu</b> | The widely reported figure is about 500 hours per minute. Ask: could any human check it all? Why do platforms use AI?                                                |
| <b>W4 Fri</b> | Safety vs. flow of traffic. Who decides the rules a machine follows?                                                                                                 |
| <b>W5 Mon</b> | Opens copyright and fairness. There’s no settled answer, and courts are deciding cases now.                                                                          |
| <b>W5 Tue</b> | 5 minutes. Each machine makes 1 widget in 5 minutes. The tempting fast answer is 100.                                                                                |
| <b>W5 Wed</b> | Clear requests name the audience, goal, length and limits. Clear thinking makes a clear prompt.                                                                      |
| <b>W5 Thu</b> | Compare with AI: Meta said its Llama 3 models were trained on over 15 trillion tokens (2024), far more than any human could read in thousands of lifetimes.          |
| <b>W5 Fri</b> | Reverse image search, look for reports from trusted outlets, check details (hands, text, shadows), and find the original source.                                     |
| <b>W6 Mon</b> | Writing is a way of thinking, not just a product. Connect to why we do the Ponder step on paper.                                                                     |
| <b>W6 Tue</b> | Take the goat over. Return. Take the wolf over, bring the goat back. Take the cabbage over. Return. Take the goat over.                                              |
| <b>W6 Wed</b> | Connect to “Train the Machine”: missing data leads to missing understanding.                                                                                         |
| <b>W6 Thu</b> | A phone takes roughly 10–20 Wh a charge, so about 4–7 kWh a year. That’s around \$1 at typical U.S. prices. Then compare with how much electricity data centers use. |
| <b>W6 Fri</b> | Collect these and post them as a class agreement.                                                                                                                    |

# Thank you for teaching with ARQIV

This resource was made to help students think first and then learn to use AI well. We hope it sparks great conversations in your classroom.

## You may

- Print and copy this resource for the students in your own classes.
- Display it on your classroom projector or board.
- Share it with students through a password-protected learning platform (Google Classroom, Canvas, Schoology and similar).

## Please don't

- Share it with other teachers, a whole school or a district. Send them to **arqiv.si/teachers/resources** instead, or ask us about a school license.
- Post it on a public website, or sell or redistribute it in any form.
- Use it to train or fine-tune an AI model.

## Questions, school licenses & workshops

Email **steve.ryan@arqiv.fm**. We also run Think-First workshops for staff and families.

### FREE ONLINE COMPANIONS

Interactive versions of our games and labs are at **arqiv.si/teachers/labs**. Students can use them on any device, with no login.

ARQIV resources are written by people and reviewed for accuracy. Facts were checked against the sources listed in each kit as of 2026. AI changes quickly. If you spot anything that needs updating, please tell us.