

Unplugged AI Week

Five AI lessons, no devices, about 45 minutes each, grades 4–8.

Print counts are for a class of 24 in groups of 4. Scale up or down.

THE WEEK

Day 1	Robot Route	Program vs. learn	45 min
Day 2	Twenty Questions Tree	Decision trees	45 min
Day 3	Matchbox Brain	Learning from mistakes	45 min
Day 4	Next Word	How chatbots write	45 min
Day 5	Is that real?	Real or AI-made?	45 min

MATERIALS FOR THE WEEK

For a class of 24. Supplies are reused each day, so each count is for the busiest day.

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|--|---|
| ☐ Pencils: 12 | ☐ Robot tokens (cut from the Maze Book): 6 |
| ☐ Scissors: 6 | ☐ Six-sided dice: 6 |
| ☐ Coins or counters: 36 | |

Plus each day's printing (listed on its page) and scrap paper for exit tickets.

GOOD TO KNOW

Before you print

- Card files print on Avery 5388, card stock, or plain paper. On plain paper, cut along the tick marks with a trimmer, or join the ticks with a ruler and cut with scissors.
- No dice? Write 1–6 on six slips, draw one from a cup, and put it back every time.

Planning the week

- Works any week. Run the days in order: each one builds on the last.
- 3rd grade? Days 2, 3 and 5 suit age 8 and up. The other days are for ages 9 and up.
- Classroom poster: page 7. Print it once, landscape, and put it up on Day 1.
- Certificate: page 8. Print one per student for Day 5.

Day 1: Robot Route

Program vs. learn

A program works on one maze. A learned habit works on mazes it never saw, until it meets something new.

Every AI system is built on this split. The rest of the week builds on it.

45-MINUTE PLAN

- 5 min** Hook. Ask: to get a robot out of any maze, would you write it exact steps, or teach it a habit? Take a show of hands, then play.
- 30 min** Play. Groups of 4 (6 groups). Each group plays Robot Route from its Instruction sheet.
- 5 min** Debrief. Ask:
- 1 Why did your Act 1 program crash on Test maze 1?
 - 2 Where did your habit-taught robot freeze or go in circles? What was missing from its training mazes?
- 5 min** Exit ticket. In one sentence: what is the difference between programming a robot and teaching it?

PRINT FOR A CLASS OF 24

Instruction sheet	x 6 (6 pages)
Full rules	x 1 (2 pages)
Maze Book	x 6 (12 pages)
Habit Sheet	x 6 (6 pages)

You also need: pencils (12), robot tokens (cut from the Maze Book) (6).

MAKE IT 60 MINUTES (+10 MIN)

More data: add a crossroads row to your sheet in pencil, teach it on Test maze 2, then try again. That's retraining.

Day 2: Twenty Questions Tree

Decision trees

A computer sorts things by asking yes/no questions about them, one after another.

Features and yes/no splits are how many real systems sort email, photos and forms.

45-MINUTE PLAN

- 5 min** Hook. Think of an animal and let the class guess it with yes/no questions. Count how many questions it took.
- 25 min** Play. Groups of 4 (6 groups). Each group plays Twenty Questions Tree from its Instruction sheet.
- 10 min** Debrief. Ask:
- 1 Which question did your team ask first, and why that one?
 - 2 Which Surprise did your tree get wrong? What question would fix it?
 - 3 Can a smaller tree be worse? When?
- 5 min** Exit ticket. Write one yes/no question that would help a computer tell a cat from a robot dog.

PRINT FOR A CLASS OF 24

Instruction sheet	x 6 (6 pages)
Full rules	x 1 (2 pages)
Object cards	x 6 (12 pages)
Tree Mat	x 12 (12 pages)

You also need: pencils (12), scissors (6).

Before class

- Cut out the Object cards and fold the Surprise cards before class, or add 5 minutes for groups to do it.

MAKE IT 60 MINUTES (+10 MIN)

Retrain: after the Surprises, add them to the Training pile and build again. Does the tree change?

Day 3: Matchbox Brain

Learning from mistakes

The robot is never told how to play well. It only finds out when it loses, and it never makes that move again.

This is reinforcement learning, the idea behind game-playing AI, done with a pencil.

45-MINUTE PLAN

- 5 min** Hook. Ask: how did you learn not to touch a hot pan? Did someone explain it, or did you find out?
- 25 min** Play. Groups of 4 (6 groups). Each group plays Matchbox Brain from its Instruction sheet.
- 10 min** Debrief. Ask:
- 1 Were the early games or the late games harder to win? Why?
 - 2 Look at the Brain Mat: which tiles never got crossed off? What does the robot still not know?
 - 3 Does the robot understand the game, or does it just have fewer bad moves left?
- 5 min** Exit ticket. Finish the sentence: The robot got better because...

PRINT FOR A CLASS OF 24

Instruction sheet	x 6 (6 pages)
Full rules	x 1 (2 pages)
Brain Mat	x 6 (18 pages)
Learning Log	x 6 (6 pages)

You also need: pencils (6), six-sided dice (6), coins or counters (36).

MAKE IT 60 MINUTES (+15 MIN)

Two brains: print two mats. Train one carefully and one with random Trainer moves. Then a new player plays both. Which robot is tougher? The teacher matters.

Day 4: Next Word

How chatbots write

A chatbot picks each next word from what usually came next in what it read.

It shows why fluent is not the same as true, the habit kids need most with chatbots.

45-MINUTE PLAN

5 min Hook. Say: "The cat sat on the..." and let everyone call out the next word. Ask: how did you all know?

20 min Play. Groups of 4 (6 groups). Each group plays Next Word from its Instruction sheet.

15 min Debrief. Ask:

- 1 Your cards made a sentence that was never in the story. How?
- 2 Why does rolling the die give a different sentence each time?
- 3 A chatbot that sounds sure but is wrong: what is that called?

5 min Exit ticket. Write a sentence the cards could make that is not in the story. Is it true?

PRINT FOR A CLASS OF 24

Instruction sheet	x 6 (6 pages)
Full rules	x 1 (2 pages)
Model + Story cards (Avery 5388)	x 6 (30 pages)

You also need: six-sided dice (6), coins or counters (6).

MAKE IT 60 MINUTES (+10 MIN)

Greedy robot: no die. Always take the word with the most faces (on a tie, the first one printed). What does it say? Every time? (It recites "the robot saw a fish" word for word. Always picking the top word turns a model into a parrot.)

Day 5: Is that real?

Real or AI-made?

How a photo looks is a weak clue. Where it came from is a strong one.

Kids meet AI-made photos, voices and video every day. This day practices checking before sharing.

45-MINUTE PLAN

- 5 min** Hook. Ask: has anyone seen a photo or video online and wondered if it was real? What made you wonder?
- 25 min** Play. Whole class in 6 teams of 4. Run Is that real? from the Instruction sheet.
- 10 min** Debrief. Ask:
- 1** Which clue fooled the most teams today?
 - 2** Why does checking somewhere else beat looking harder?
- 5 min** Exit ticket. Name one way to check a photo or video before you share it.

PRINT FOR A CLASS OF 24

Instruction sheet	x 6 (6 pages)
Full rules	x 1 (2 pages)
Practice Mat	x 6 (6 pages)
Case + Check cards (Avery 5388)	x 1 (8 pages)
Grown-up guide	x 1 (1 page)

You also need: coins or counters (12).

Before class

- Whole-class path: you keep one set of Case and Check cards and read each Case aloud. Each team shares one Practice Mat and agrees on one call.

MAKE IT 60 MINUTES (+10 MIN)

Has a voice message or video ever surprised you? How could you have checked it?

Why do fakes so often say "right now" or "don't tell anyone"?

Case 10 is a fake video of a kid. What should you do if a video like that reaches you?

Say this out loud

- Making a fake picture, voice or video of a real person can hurt them badly, and in many places it breaks the law. Never make one of a classmate.
- If one about you or a friend shows up: don't share it, save where you saw it, and tell a grown-up you trust.
- A money or emergency request in a familiar voice: hang up and call back on a number you already had. A family code word helps.

How a machine learns

1 Program vs. learn

2 Decision trees

3 Learning from mistakes

4 How chatbots write

5 Real or AI-made?

Hi, Bot

Unplugged AI Week

I can explain how a machine learns



Program vs. learn



Decision trees



**Learning from
mistakes**



How chatbots write



Real or AI-made?

Name

Date