FREE ACTIVITY SHEET · AGES 8–12

How Artificial Intelligence Works

Find out how AI learns from examples, and why its answers still need checking.

Name _____

Date _____

1 Fixed Rules or Learned from Examples?

Most software follows fixed rules written by a programmer. AI finds patterns in examples instead. Circle the best answer for each one.

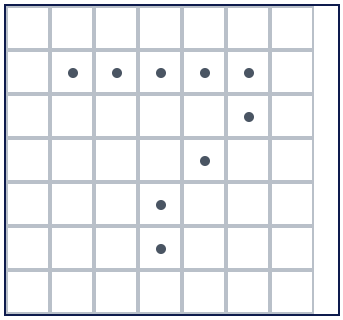
1.	A calculator adding two numbers	FIXED RULES	LEARNED
2.	An app reading a handwritten number 7	FIXED RULES	LEARNED
3.	A robot vacuum that turns when it bumps into a wall	FIXED RULES	LEARNED
4.	A photo library finding every picture of a dog	FIXED RULES	LEARNED
5.	A keyboard suggesting the next word as you type	FIXED RULES	LEARNED
6.	A filter sorting unwanted email away from the inbox	FIXED RULES	LEARNED

2 Train the Model

Use each word from the word bank once to finish the sentences.

model **pixels** **testing** **label** **pattern** **training**

1. A digital picture is a grid of tiny dots called _____.
2. Each practice picture has a _____ that says which number it shows.
3. During _____, the system guesses, checks, and adjusts itself a little.
4. _____ uses pictures the system has never seen before.
5. What comes out of training is called a _____. It makes predictions.
6. The model does not know what seven means. It has matched a _____.



Pixel picture: shade every square that has a dot. What number appears?

Good to know: An AI system is only as good as its examples. If examples are missing or one-sided, the model's answers will be too.

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3 What Went Wrong?

AI can make mistakes. Write the letter of the cause in the box next to each story.

- ☐ **1.** A model saw wolves mostly in snow. Now it treats snow as a sign of a wolf.
- ☐ **2.** A chatbot gives a quote that nobody ever said, and it sounds very sure.
- ☐ **3.** A handwriting model trained only on neat writing struggles with messy writing.
- ☐ **4.** A model does not know about something that happened last week.

A Old information
B The wrong clue
C Uneven examples
D Made-up details

4 True or False?

Circle TRUE or FALSE.

1.	AI has feelings and wishes, the way a person does.	TRUE	FALSE
2.	A chatbot builds its reply one small piece at a time.	TRUE	FALSE
3.	If an answer sounds confident, it must be correct.	TRUE	FALSE
4.	A neural network is a real brain inside the computer.	TRUE	FALSE
5.	Most AI is software. It does not need a robot body.	TRUE	FALSE

5 Safe to Type?

Some things should never be typed into an AI tool. Cross out the ones that are private.

Your full name · A question about volcanoes · Your home address · Your password · Ideas for a story about a dragon · The name of your school

Before you trust an AI answer, ask: Where could I check this? What information might the AI be missing? Does this still make sense when I think about it myself?

Answers for grown-ups. 1: 1 Fixed rules, 2 Learned, 3 Fixed rules, 4 Learned, 5 Learned, 6 Learned. **2:** 1 pixels, 2 label, 3 training, 4 Testing, 5 model, 6 pattern. Pixel picture: the number 7. **3:** 1 B, 2 D, 3 C, 4 A. **4:** 1 False, 2 True, 3 False (sounding right is not the same as being right), 4 False (it is math), 5 True. **5:** Private: full name, home address, password, name of your school.

KEEP LEARNING

Goes with the book **How Artificial Intelligence Works for Kids Ages 8–12** by Laith Sad.

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