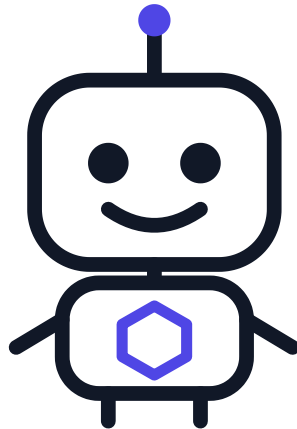




How Robots Learn to **Fix** Themselves



A 45-minute unplugged lesson about **try** → **notice** → **fix** → **remember** — the loop that teaches software to recover from its own mistakes.

45-MINUTE UNPLUGGED LESSON

AGES 8-12

NO COMPUTERS NEEDED

Before you start

Everything you need to run this lesson is in this kit. You do **not** need to be technical — the talking points on the next page are written out word-for-word.

Learning objectives

By the end of the lesson, students can:

OBJECTIVE 1

Explain that **mistakes are information** — a failure tells you something useful about what to try next.

OBJECTIVE 2

Describe and use the **try → notice → fix → remember** loop on a real, everyday problem.

OBJECTIVE 3

Explain why writing fixes into a **shared memory** stops a whole group from repeating the same mistake.

Materials

- The printed sheets in this kit
- Scissors (one pair per pair of students)
- Pencils
- Tape

Nothing else. No computers, no internet, no accounts.

Timing plan (45 min)

5 min	01	Hook — read the Hexa story aloud
10 min	02	Concept — the four-step loop
20 min	03	Activity — Bug Hunt + Memory Book
10 min	04	Share-out — build the class poster

An honest note for educators. Helix Labs builds self-repairing software for businesses. This kit teaches the underlying idea; it contains no product content and collects no student data.

What to say

Read the **SAY** lines aloud. The **DO** lines tell you what to hand out or point to.

HOOK (5 min)

SAY "I'm going to read you a very short story about a robot named Hexa. Your job is to notice the moment Hexa gets *stuck*."

DO Read the Hook Story page aloud. Then ask: "What did Hexa try first? Did it work?"

CONCEPT (10 min)

SAY "Every good problem-solver — a person *or* a robot — uses the same four steps. Let's learn them."

SAY "**TRY** something. **NOTICE** if it didn't work. **FIX** it by figuring out *why*. Then **REMEMBER** the fix, so the mistake never wins twice."

SAY "Doing the exact same thing again gives you the exact same mistake. A mistake isn't a dead end — it's a *clue*."

ACTIVITY (20 min)

DO Hand each pair a set of **Bug Hunt** cards. "On the front is something that went wrong. On the back, write WHAT went wrong, WHY, and your FIX."

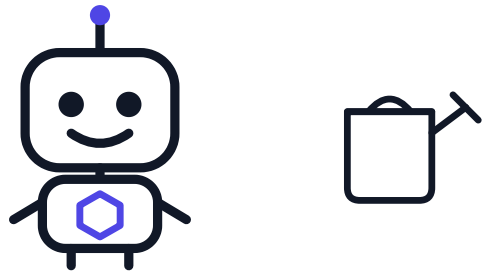
DO Give each pair a **Memory Book** template. "Pick your best fix. Write it as one rule: IF this problem, THEN this fix."

SHARE-OUT (10 min)

DO Tape every pair's rule onto the **Our Class Memory Book** poster.

SAY "Now *nobody* in this class has to make these mistakes again — we all share one memory. That's exactly how self-repairing software works."

Hexa and the Empty Can



Every morning, a little robot named **Hexa** waters the classroom plants.

One day, Hexa picks up the watering can and tips it over the plants... but **nothing comes out**. The can is **empty**.

So Hexa tries again. Same tip, same wiggle... still nothing. Hexa tries a *third* time, the exact same way — and, of course, **still nothing**.

Then Hexa stops. Hexa **looks inside the can** and thinks: “Doing the same thing keeps giving me the same problem. *Why* is it empty?”

Hexa carries the can to the sink, fills it with water, and waters every plant. It works!

Before rolling away, Hexa writes one line in its notebook: *empty can* → *refill at the sink first*. Tomorrow, this will never be a problem again.

Ask the class: What did Hexa do that finally worked? (Answer: Hexa *stopped and figured out why* — then *remembered* the fix.)

Cut out the 8 cards. Work in pairs.

Each card shows something that went wrong. Print this page and page 6 back-to-back (flip on the long edge) so each front lines up with its answer lines.



A shoelace came untied
...and you almost tripped.



The backpack zipper is stuck
...it won't open *or* close.



The LEGO tower keeps toppling
...every time it gets tall.



The flashlight won't turn on
...it was fine last week.



The bike chain slipped off
...the pedals spin but the bike won't go.



The kite won't stay in the air
...the string is all tangled.



The paper airplane nose-dives
...straight into the floor.



The headphones are in a knot
...again.

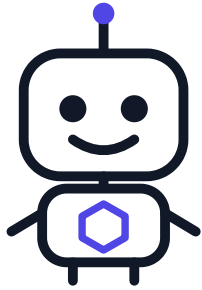
Fill in the back of each card.

Column order is mirrored so the backs line up with the fronts on page 5 when printed double-sided.

WHAT WENT WRONG? WHY? MY FIX	WHAT WENT WRONG? WHY? MY FIX
WHAT WENT WRONG? WHY? MY FIX	WHAT WENT WRONG? WHY? MY FIX
WHAT WENT WRONG? WHY? MY FIX	WHAT WENT WRONG? WHY? MY FIX
WHAT WENT WRONG? WHY? MY FIX	WHAT WENT WRONG? WHY? MY FIX

Fold on the dotted line to make a little book.

Write your best fix as one rule. Use the shape: IF [problem] THEN [fix].



MY MEMORY BOOK

Names of our pair:

Our best fixes

IF

THEN

IF

THEN

IF

THEN

← fold here • cover goes on the outside

When your pair picks a favorite rule, copy it onto a slip of paper and take it to the class poster on the next page.



Our Class Memory Book

Tape every pair's best rule here. When one of us learns a fix, **all of us** remember it.

TAPE RULES BELOW • IF ... THEN ...

Talk about it

Ask these three questions. There are no wrong answers — the goal is to notice why *remembering* matters.

1 What happens tomorrow if the same problem comes back?

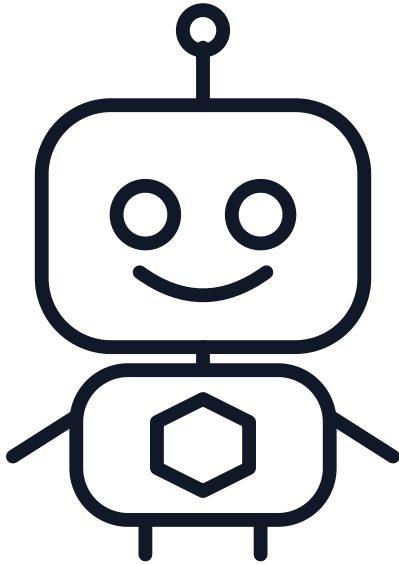
2 What if a NEW kid joins our class — do they have to make all the mistakes again?

3 Where else could a memory book help?

Big idea to land: Software that shares a memory book fixes a mistake *once* — and then the mistake never wins twice, for anyone who shares the book.

Color Hexa & remember the loop

Color the robot any way you like, then follow the arrows around the loop.



STEP 1

TRY



STEP 2

NOTICE



STEP 3

FIX



STEP 4

REMEMBER

🔄 and the mistake never wins twice

FOR GROWN-UPS AT HOME

Today we learned how engineers teach software to recover from mistakes. Learn more at tryhelix.dev/kids-lab.



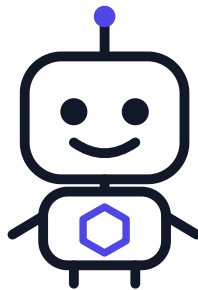
HELIX KIDS LAB

Robot Repair Certificate

This certifies that

NAME (WRITE YOUR OWN)

is now a **Certified Robot Repair Helper** — someone who knows that mistakes are clues, and that the loop `try → notice → fix → remember` beats every bug.



TEACHER SIGNATURE

DATE