

SIX EXPERIENCES / SUGGESTED SIX-WEEK PATHWAY

Skills to use, explain and grow

Compare alternatives using explicit evidence and criteria.

About 50 minutes per experience. Use one experience each week, or split it into shorter sessions. Grade labels are flexible starting points.

Your course map

1. Create a reproducible workspace - page 2
2. Build an evidence-based argument - page 4
3. Compare changes using the starting value - page 6
4. Test boundaries in a decision - page 8
5. Distinguish AI help from evidence - page 10
6. Budget for a small pilot - page 12

A useful learning routine

Read the goal and example. Follow the four steps. Try the three questions. Make the project, explain your choices and reflect. Spend roughly half the session making and explaining.

Name or classroom nickname: _____ Start date: _____

Learning partner: _____

Print A4 portrait at 100% or Actual size. These are paper workbooks, not fillable forms. Learner questions and teacher answers are in separate documents. Version: 12 October 2026.

EXPERIENCE 1 / DIGITAL CONFIDENCE

Create a reproducible workspace

Organise inputs, outputs and a method another person can follow. | About 50 minutes

Reproducible work records what was used and how it was transformed. Preserve original inputs and identify generated outputs.

Worked example: A reading survey workspace has raw/, working/, outputs/ and a README explaining the anonymised example data and calculations.

Follow the steps

1. Separate: Keep original inputs separate from working files.
2. Document: Write the method and tool version used.
3. Generate: Save outputs with clear names.
4. Repeat: Ask a partner to follow the README on a copy.

Try these exercises

1. Which file best helps another person repeat the work?

A. An unexplained screenshot | B. A README with inputs and steps | C. An empty folder

Answer: _____

2. Which evidence would best show this skill?

A. Say it is finished without checking | B. Copy an unrelated answer | C. Preserve original inputs and explain or demonstrate it

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Repeat | B. Generate | C. Document | D. Separate

Answer: _____

EXPERIENCE 1 / CREATE, EXPLAIN AND REFLECT

Create a reproducible workspace

Build a fictional data-project folder plan and README. Have a partner identify inputs, outputs and repeatable steps.

Worked example reference - explain it, then try your own project

STEP 1

Separate

STEP 2

Document

STEP 3

Generate

STEP 4

Repeat

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ Preserve original inputs
- ☐ Explain dependencies and steps
- ☐ Record the repeat attempt

What did I learn, change or need help with?

Next challenge: Add a known limitation to your README.

These ticks are a self-review. Ask an adult or partner to review what you can show.

EXPERIENCE 2 / CREATE AND COMMUNICATE

Build an evidence-based argument

Connect a claim, evidence, reasoning and limitation. | About 50 minutes

Evidence does not explain itself. Reasoning shows how evidence supports a claim; a limitation states what remains uncertain.

Worked example: A fictional library trial records 18 returns on time out of 20. This supports a claim about that trial, not proof that reminders work for every class.

Follow the steps

1. Claim: Write a narrow claim about the trial.
2. Evidence: Include 18 of 20 and the context.
3. Reason: Explain why the count is relevant.
4. Limit: State what this trial cannot establish.

Try these exercises

1. What is missing from We had 18 timely returns, so reminders always work?

A. Limits and possible alternative explanations | B. A longer slogan | C. A brighter title

Answer: _____

2. Which evidence would best show this skill?

A. Copy an unrelated answer | B. Make a bounded claim and explain or demonstrate it | C. Say it is finished without checking

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Limit | B. Reason | C. Evidence | D. Claim

Answer: _____

EXPERIENCE 2 / CREATE, EXPLAIN AND REFLECT

Build an evidence-based argument

Write a short recommendation from the fictional trial. Include an alternative explanation.

Worked example reference - explain it, then try your own project

STEP 1
Claim

STEP 2
Evidence

STEP 3
Reason

STEP 4
Limit

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ Make a bounded claim
- ☐ Connect reasoning to evidence
- ☐ Name a limitation

What did I learn, change or need help with?

Next challenge: Suggest a comparison that would strengthen the argument.

These ticks are a self-review. Ask an adult or partner to review what you can show.

EXPERIENCE 3 / DATA AND DECISIONS

Compare changes using the starting value

Distinguish absolute change from percentage change. | About 50 minutes

Percentage change uses the starting value as the denominator. The same absolute increase can have different percentage meanings.

Worked example: A fictional count rises from 40 to 50. The increase is 10; percentage increase = $10 / 40 \times 100 = 25\%$.

Follow the steps

1. Read: Read the labels and values: Before: 40, After: 50.
2. Represent: Compare the bars on a scale that starts at zero.
3. Calculate: Work through the calculation in the example; result: 25.
4. Interpret: Explain what the result means and what it does not establish.

Try these exercises

1. What is the percentage increase from 40 to 50?

A. 24 | B. 25 | C. 27

Answer: _____

2. Which evidence would best show this skill?

A. Use the supplied values accurately and explain or demonstrate it | B. Say it is finished without checking | C. Copy an unrelated answer

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Interpret | B. Calculate | C. Represent | D. Read

Answer: _____

EXPERIENCE 3 / CREATE, EXPLAIN AND REFLECT

Compare changes using the starting value

Show absolute and percentage change for 40 to 50 and for 80 to 90. Explain the difference.

Worked example reference - explain it, then try your own project

Before		40
After		50

Equal scale starts at 0; maximum 50. Fictional values.

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ Use the supplied values accurately
- ☐ Show a calculation or count with its meaning
- ☐ State a fair comparison or limitation

What did I learn, change or need help with?

Next challenge: Describe why a percentage increase from a zero starting value is undefined with this formula.

These ticks are a self-review. Ask an adult or partner to review what you can show.

EXPERIENCE 4 / COMPUTATIONAL THINKING

Test boundaries in a decision

Choose tests on both sides of a threshold. | About 50 minutes

Boundary tests check values close to where behavior changes. They help expose mistakes such as using $>$ instead of $\geq$.

Worked example: A fictional score rule accepts whole numbers from 0 to 10 and passes scores ≥ 6 . Test 5, 6 and 7 after validating the range.

Follow the steps

1. Rule: The pass threshold is score ≥ 6 .
2. Below: Score 5 fails.
3. Boundary: Score 6 passes.
4. Above: Score 7 passes.

Try these exercises

1. Which score is the boundary that must pass?

A. 5 | B. 6 | C. -1

Answer: _____

2. Which evidence would best show this skill?

A. Say it is finished without checking | B. Copy an unrelated answer | C. State validation and decision separately and explain or demonstrate it

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Above | B. Boundary | C. Below | D. Rule

Answer: _____

EXPERIENCE 4 / CREATE, EXPLAIN AND REFLECT

Test boundaries in a decision

Write expected outputs for -1, 0, 5, 6, 7, 10 and 11. Separate invalid from valid-but-failing input.

Worked example reference - explain it, then try your own project

STEP 1
Rule

STEP 2
Below

STEP 3
Boundary

STEP 4
Above

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ State validation and decision separately
- ☐ Test exact boundaries
- ☐ Compare actual and expected behavior

What did I learn, change or need help with?

Next challenge: Find a test that distinguishes $>$ from $\geq$.

These ticks are a self-review. Ask an adult or partner to review what you can show.

EXPERIENCE 5 / RESPONSIBLE TECHNOLOGY

Distinguish AI help from evidence

Check generated claims against suitable sources. | About 50 minutes

AI may help generate ideas, but its output is not proof. Citations, quotations and calculations need independent checking.

Worked example: A fictional AI response invents a book title as evidence. A catalogue check cannot find it. Mark the citation unverified; do not use it as a source.

Follow the steps

1. Claim: Identify the specific generated claim.
2. Trace: Try to locate the stated source in an approved reference.
3. Verify: Check that the source exists and supports the claim.
4. Disclose: Explain tool use and unresolved uncertainty honestly.

Try these exercises

1. A cited source cannot be located. What should you do?

A. Mark it unverified and seek suitable evidence | B. Assume it exists | C. Invent a quotation

Answer: _____

2. Which evidence would best show this skill?

A. Copy an unrelated answer | B. Separate suggestion from evidence and explain or demonstrate it | C. Say it is finished without checking

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Disclose | B. Verify | C. Trace | D. Claim

Answer: _____

EXPERIENCE 5 / CREATE, EXPLAIN AND REFLECT

Distinguish AI help from evidence

Audit a fictional AI answer containing one calculation and one invented citation. Document each check.

Worked example reference - explain it, then try your own project

STEP 1
Claim

STEP 2
Trace

STEP 3
Verify

STEP 4
Disclose

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ Separate suggestion from evidence
- ☐ Verify the source and its relevance
- ☐ Disclose unverified claims

What did I learn, change or need help with?

Next challenge: Describe a task where AI brainstorming could help without being treated as evidence.

These ticks are a self-review. Ask an adult or partner to review what you can show.

EXPERIENCE 6 / DESIGN AND LIFE SKILLS

Budget for a small pilot

Separate fixed and per-item costs in a model. | About 50 minutes

A simple cost model states assumptions. Fixed costs stay the same within the stated range; per-item costs depend on quantity.

Worked example: Fictional setup cost 30 units plus 4 units per kit. Five kits cost $30 + 4 \times 5 = 50$ units.

Follow the steps

1. Define: State setup = 30 and per-kit = 4.
2. Model: Cost = $30 + 4 \times$ number of kits.
3. Calculate: At five kits the model gives 50.
4. Challenge: List a cost or condition the model may omit.

Try these exercises

1. What is the modelled cost for five kits?

A. 150 | B. 20 | C. 50

Answer: _____

2. Which evidence would best show this skill?

A. Separate fixed and variable parts and explain or demonstrate it | B. Say it is finished without checking | C. Copy an unrelated answer

Answer: _____

3. Put the worked-example steps in order.

Write the letters in order. A. Challenge | B. Calculate | C. Model | D. Define

Answer: _____

EXPERIENCE 6 / CREATE, EXPLAIN AND REFLECT

Budget for a small pilot

Compare costs for 5 and 10 kits using pretend prices. State two assumptions and a pilot limit.

Worked example reference - explain it, then try your own project

STEP 1
Define

STEP 2
Model

STEP 3
Calculate

STEP 4
Challenge

My notes, drawing or dictated explanation (attach another sheet if needed):

Review your evidence

- ☐ Separate fixed and variable parts
- ☐ Calculate from the same model
- ☐ Disclose omitted factors

What did I learn, change or need help with?

Next challenge: Explain why average cost per kit can change with quantity.

These ticks are a self-review. Ask an adult or partner to review what you can show.

KEEP THE LEARNING GOING

Explain your next step

Choose one work sample. Explain an improvement you made, the evidence you used and where you could use the skill next.

Support and safe practice

Use fictional examples and approved tools. Ask an adult for help with instructions and classroom materials. No public posting, live AI account, purchase or personal information is needed.

Online companion

<https://www.heliolearn.com/skills/grade-9/>

Use the web pages for controllable animations and automatic exercise feedback. New practice-space notes stay in the browser and do not sync to school accounts. Download notes before changing devices. Help: <https://www.heliolearn.com/skills/help/>

Curriculum context

Original enrichment activities with an editorial grade progression. These are not a complete examination-board syllabus or formally endorsed by the organisations below.

ISTE student standards: broad digital-learning context

<https://iste.org/standards/students>

UNICEF: transferable skills across childhood and adolescence

<https://www.unicef.org/lac/en/transferable-skills-development>

UNESCO: student AI competencies

<https://www.unesco.org/en/articles/ai-competency-framework-students>