

SIX PRACTICAL COURSES / 30 LESSONS

Teach for useful skills

Separate answer guide • Adult review • About 40 minutes per lesson

Aim for accuracy, independence, thoughtful explanation and transfer to a new task. This is an original Grade 4 learning sequence, not an accredited or formally endorsed curriculum.

Week 1 | Computer confidence | pages 3-7

Find your way, organise your work and recover from mistakes.

Week 2 | Create and communicate | pages 8-12

Turn ideas into clear writing, pictures and presentations.

Week 3 | Data detectives | pages 13-17

Ask fair questions, check numbers and explain what a chart can tell you.

Week 4 | Coding explorers | pages 18-22

Plan instructions, run them, find bugs and improve your program.

Week 5 | Smart information users | pages 23-27

Ask good questions, check evidence and use digital tools responsibly.

Week 6 | Young problem-solvers | pages 28-32

Combine observation, planning, making and teamwork in a useful project.

A consistent lesson rhythm

Learn 7 minutes, practise 8, create 15, explain 5 and reflect 5. Demonstrate briefly. Let the learner try, give a hint rather than taking over, then ask them to show evidence. Adjust timing and add breaks as needed.

Preparation: a keyboard where available, paper and pencil, approved file/editor tools, fictional source cards on the website and optional light counters. The PDF is usable on paper; real file-saving skills still need later device practice.

The student workbook has 62 A4 pages: pages 1-2 introduce the route, then two pages per lesson. This guide has one page per lesson after these two planning pages.

REVIEW, INCLUSION AND SAFE PRACTICE

Look beyond a correct answer

Use a three-level review

With help: The learner completes part of the task with prompts. Name the next support needed.

Independently: The learner meets the three lesson criteria, checks the result and explains a choice.

Transfer to a new task: The learner applies the same skill to a fresh situation and explains the connection.

Record observations, not labels about the child. The website automatically checks the three practice answers. Project ticks, explanations and confidence are learner self-reports for human review. Completing all steps is not certification.

Make participation possible

Read aloud, allow oral or drawn explanations, use fewer copied words, pair with an adult and provide extra time. Revisit a single skill when needed. Optional stretches should deepen understanding, not create pressure.

Protect privacy and handle practical materials

Use fictional data and adult-supported research. Do not require child AI accounts or public posting. Keep personal identifiers out of drafts. For a paper bridge, prepare a small stable gap; use only paper and light counters. Keep hands clear of falling counters.

Guest and learner workspaces are separate. Signed-in step records and scores use the existing Grade 4 account. Written drafts and practical-tool projects remain browser-local: download copies before clearing browser data or changing devices.

Reference context for adults

The activities are original; these references inform the broad skills and digital-literacy context, rather than certify alignment to a particular school syllabus.

OECD Learning Compass: broader learning framework

UNICEF: transferable skills

UNESCO: student AI competencies

UNICEF: keeping children safe online

Scratch: getting started guide

Microsoft: saving and backing up files

Microsoft: creating a presentation

COURSE 1 / COMPUTER CONFIDENCE / LESSON 1

Meet your digital workspace

Student workbook pages 3-4 • Approximately 40 minutes

Learning goal: Identify input, processing, output and storage in a familiar task.

Practice answers and reasons

1. A. Keyboard

A keyboard provides input.

2. B. Saving a file

Saving writes the work to a storage location.

3. C. Both input and output

It displays information and accepts touches.

Project evidence to review

Draw and label your workspace. Add arrows showing input → processing → output; add a storage box. Use paper if a device is unavailable.

- ☐ Label at least one input and one output
- ☐ Show where the work is saved
- ☐ Explain the job of each labelled part

Discuss the explanation

What is the difference between seeing your work and saving it?

Possible response: Seeing is output. Saving stores a copy so I can find the work later.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain how a microphone and speaker have different jobs.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 1 / COMPUTER CONFIDENCE / LESSON 2

Type, edit and undo

Student workbook pages 5-6 • Approximately 40 minutes

Learning goal: Correct text using the keyboard and check the result.

Practice answers and reasons

1. A. Before the cursor

Backspace removes the character just before the cursor.

2. B. Select that word

Selecting just the word keeps the rest of the sentence.

3. I can check my work.

Use the capital I, spaces and final full stop.

Project evidence to review

Write three sentences about something you enjoy. Correct a deliberate spelling mistake, then save the corrected version.

- ☐ Use spaces and sentence-ending punctuation
- ☐ Correct an error without deleting the paragraph
- ☐ Save and reopen the corrected text

Discuss the explanation

How did you check accuracy without rushing?

Possible response: I read each sentence, compared uncertain words, and checked punctuation after editing.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Replace a repeated word with a more precise one and explain your choice.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 1 / COMPUTER CONFIDENCE / LESSON 3

Names that help you find files

Student workbook pages 7-8 • Approximately 40 minutes

Learning goal: Choose descriptive file names and recognise file types.

Practice answers and reasons

1. B. plant-height-week1.txt

The name says what the file contains and which week it records.

2. C. .xlsx

Excel workbooks commonly use .xlsx.

3. B. No

A name change does not convert a file format.

Project evidence to review

Plan names for a story, a survey and a drawing. Save two practice text files, then explain how you will find each one tomorrow.

- ☐ Choose names that describe the contents
- ☐ Keep the correct file type
- ☐ Find the right file by its name

Discuss the explanation

What two clues help you recognise a file?

Possible response: The descriptive name tells me its subject. The extension gives a clue about the file type.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Design a naming rule for first drafts and improved versions.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 1 / COMPUTER CONFIDENCE / LESSON 4

Folders and a safe saving routine

Student workbook pages 9-10 • Approximately 40 minutes

Learning goal: Organise files and make a separate backup copy.

Practice answers and reasons

1. B. Copy

Copy leaves the original and creates another file.

2. C. File name and location

These help you find the correct work later.

3. D → C → B → A (Choose a useful name; Save in the correct folder; Open the saved file; Check the content)

Reopening confirms you saved the work you intended.

Project evidence to review

Organise your practice files into Practice, Projects and Backup. Write a four-step saving checklist on paper.

- ☐ Find the project in the intended folder
- ☐ Keep an identifiable backup copy
- ☐ Reopen and check the saved content

Discuss the explanation

Why is moving a file different from backing it up?

Possible response: Moving changes where the one file lives. A backup gives me an additional copy.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain why a separately approved backup location can help if a device is lost.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 1 / COMPUTER CONFIDENCE / LESSON 5

My organised learning portfolio

Student workbook pages 11-12 • Approximately 40 minutes

Learning goal: Complete a small task and demonstrate a reliable saving routine.

Practice answers and reasons

1. B. A finished piece plus an explanation of an improvement

The work and explanation show what changed and why.

2. A. Check its likely folder and name

Start by checking the location and name you used.

3. B. Save, check your work and sign out when appropriate

Protect your work and your account on a shared device.

Project evidence to review

Create a mini portfolio with two text files and a contents note. Demonstrate opening the right file without guessing.

- ☐ Use useful file names and folders
- ☐ Show a saved improvement
- ☐ Explain the saving and backup routine independently

Discuss the explanation

Which routine will help you work independently next time?

Possible response: I will name, save, reopen and check my file, then keep an approved backup.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Teach the routine to a partner, then ask them to explain it back.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 2 / CREATE AND COMMUNICATE / LESSON 1

Write for a real reader

Student workbook pages 13-14 • Approximately 40 minutes

Learning goal: Choose useful information for a particular audience.

Practice answers and reasons

1. A. The new pupil

The reader is the audience.

2. B. Bring a pencil and notebook

It names the items the reader needs.

3. C. Unrelated details

Extra unrelated information can hide the main message.

Project evidence to review

In the studio, write a welcome note for a new pupil. Include a title, three helpful details and a kind closing sentence.

- ☐ Name or make the audience clear
- ☐ Include useful, accurate information
- ☐ Use respectful, understandable language

Discuss the explanation

How did knowing the reader change your writing?

Possible response: I chose information that a new pupil would need and explained unfamiliar words.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Rewrite the same message for a parent and compare the details.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 2 / CREATE AND COMMUNICATE / LESSON 2

Build a clear document

Student workbook pages 15-16 • Approximately 40 minutes

Learning goal: Organise a short document with a title, headings and readable text.

Practice answers and reasons

1. A. Find a group of related information

Headings organise related ideas.

2. B. Steps in the order they happen

A sequence helps the reader carry out the task.

3. D → C → B → A (Plan the message; Write a draft; Read and improve it; Save the checked version)

Revision belongs before saving the final checked version.

Project evidence to review

Create a one-page guide called Caring for a classroom plant. Include a title, two sections and three numbered care steps. Ask an adult to check plant-specific advice.

- ☐ Organise the page with meaningful headings
- ☐ Use short readable sections
- ☐ Check spelling and save a version

Discuss the explanation

What layout choice helped your reader most?

Possible response: Numbered steps made the order clear, and headings helped the reader find each section.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Ask a partner to locate one instruction without you pointing to it.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 2 / CREATE AND COMMUNICATE / LESSON 3

Make a useful poster

Student workbook pages 17-18 • Approximately 40 minutes

Learning goal: Combine a short message with a relevant visual.

Practice answers and reasons

1. B. The time and place

People need the practical event details.

2. B. Use your own drawing

Your own drawing avoids using someone else's private or unlicensed image.

3. A. The main message

Visual emphasis should make the main message easy to notice.

Project evidence to review

Design a paper poster encouraging a helpful classroom habit. Use the studio to plan the title, key details and image description.

- ☐ Make one main message easy to identify
- ☐ Include the details needed to act
- ☐ Use a relevant, permitted picture and readable contrast

Discuss the explanation

Why did you choose your picture and title?

Possible response: They both support the same main message and help the audience understand it quickly.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Ask a partner what they noticed first; revise if it was not the main message.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 2 / CREATE AND COMMUNICATE / LESSON 4

Tell a story in three slides

Student workbook pages 19-20 • Approximately 40 minutes

Learning goal: Organise a short presentation with a beginning, evidence and ending.

Practice answers and reasons

1. A. Evidence supporting the topic

An example or evidence develops the main idea.

2. B. So the audience can listen while seeing key ideas

Short key points support the speaker.

3. C $\rightarrow$ B $\rightarrow$ A (Introduce the question; Show the evidence; Explain the conclusion)

The conclusion should follow the evidence.

Project evidence to review

Prepare a three-slide talk about a classroom improvement. Include one observation and a practical suggestion.

- ☐ Use three slides with a clear order
- ☐ Support the suggestion with an observation
- ☐ Speak in your own words rather than reading every word

Discuss the explanation

How does your evidence support your suggestion?

Possible response: My observation identifies a problem, and my suggestion addresses that particular problem.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Add a sentence about a limitation in your evidence.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 2 / CREATE AND COMMUNICATE / LESSON 5

Present, listen and improve

Student workbook pages 21-22 • Approximately 40 minutes

Learning goal: Explain an idea and use respectful feedback to improve it.

Practice answers and reasons

1. B. The labels are small; please make them larger

It identifies a clear issue and a possible improvement.

2. B. Listen and wait for a suitable turn

Listening helps you understand before responding.

3. B. No; consider it and explain your decision respectfully

Use judgement and explain your decision kindly.

Project evidence to review

Present your poster or slides to an adult or partner. Record one piece of feedback and an improved version in your portfolio.

- ☐ Explain the main idea clearly
- ☐ Listen and respond respectfully
- ☐ Make or justify one thoughtful improvement

Discuss the explanation

What changed after you listened to feedback?

Possible response: I changed a specific part that confused my listener and checked whether it became clearer.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Ask a different listener to explain your message back to you.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 3 / DATA DETECTIVES / LESSON 1

Ask a fair survey question

Student workbook pages 23-24 • Approximately 40 minutes

Learning goal: Choose a clear question and response rule.

Practice answers and reasons

1. B. Which activity would you choose?

The question does not tell the respondent which choice is preferred.

2. A. To make the rule consistent

A consistent voting rule makes the counts meaningful.

3. C. Home address

A home address is not needed to count activity preferences.

Project evidence to review

Write an anonymous three-choice survey on paper. Ask an adult to check that the question is clear and fair.

- ☐ Ask one neutral question
- ☐ Give clear choices and a response rule
- ☐ Avoid unnecessary personal information

Discuss the explanation

How might a leading question change your results?

Possible response: It may encourage people to choose the answer suggested by the question instead of their real preference.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain what you would do if someone wanted an option not listed.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 3 / DATA DETECTIVES / LESSON 2

Count carefully and clean data

Student workbook pages 25-26 • Approximately 40 minutes

Learning goal: Convert responses into accurate counts and notice errors.

Practice answers and reasons

1. 3

Read appears three times.

2. 6

 $3 + 2 + 1 = 6$.

3. B. Check the source and correct the duplicate

Verify the source before removing a duplicated record.

Project evidence to review

Make a clean table from: Chess, Art, Chess, Sport, Art, Chess, Sport, Art. Record one check you used.

- ☐ Count Chess 3, Art 3 and Sport 2
- ☐ Check that the total is 8
- ☐ Keep a note of any correction and its reason

Discuss the explanation

Why check the original responses as well as the total?

Possible response: A total can be right even when two categories contain incorrect counts.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Create two incorrect category counts that still add to 8 and explain the problem.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 3 / DATA DETECTIVES / LESSON 3

Totals and comparisons

Student workbook pages 27-28 • Approximately 40 minutes

Learning goal: Use totals and differences to answer data questions.

Practice answers and reasons

1. 16

$$7 + 5 + 4 = 16.$$

2. 3

$$7 - 4 = 3.$$

3. 18

The count increased by 2, so $16 + 2 = 18$.

Project evidence to review

Use your clean survey table to write one total statement and two comparison statements. Check the arithmetic.

- ☐ Calculate the total correctly
- ☐ Use subtraction for a difference
- ☐ Match each statement to the correct categories

Discuss the explanation

How did you predict the changed total without adding everything again?

Possible response: Only one count increased by 2, so the total also increased by 2.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Find a different change to two categories that keeps the total unchanged.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 3 / DATA DETECTIVES / LESSON 4

Choose and read a chart

Student workbook pages 29-30 • Approximately 40 minutes

Learning goal: Create a clearly labelled bar chart and interpret its scale.

Practice answers and reasons

1. A. Three

The survey has three activity choices.

2. A. To explain what the data is about

A title provides context for the reader.

3. C. Games

Games has 4, the smallest count.

Project evidence to review

Create a chart of your survey, on paper or in the data lab. Write a sentence that compares two categories.

- ☐ Use an informative title and correct labels
- ☐ Represent counts accurately from zero
- ☐ Exclude the total from the categories

Discuss the explanation

What would be misleading about treating Total as another activity?

Possible response: Total combines all responses. Comparing it as a separate activity would misrepresent the choices.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain how a missing or unclear scale could confuse a reader.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 3 / DATA DETECTIVES / LESSON 5

Tell an honest data story

Student workbook pages 31-32 • Approximately 40 minutes

Learning goal: Support a conclusion with evidence and state a limitation.

Practice answers and reasons

1. B. Reading received the most votes in this group

The evidence supports a statement about this group's votes.

2. A. We only asked one small group

A small group may not represent other groups.

3. B. Report the tie clearly

Honest reporting includes equal results.

Project evidence to review

Prepare a short data report with a question, table or chart, evidence-based conclusion and limitation. Suggest a fair next step.

- ☐ Link the conclusion to actual counts
- ☐ State who or what the data represents
- ☐ Acknowledge a limitation or tie

Discuss the explanation

What does your evidence show, and what does it not tell you?

Possible response: It shows the choices in this group. It does not prove that other groups would choose the same way.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Plan how you could improve the survey before repeating it.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 4 / CODING EXPLORERS / LESSON 1

Give precise instructions

Student workbook pages 33-34 • Approximately 40 minutes

Learning goal: Write and test an ordered set of instructions.

Practice answers and reasons

1. 3

 $0 + 3 = 3$.

2. B. Move one square right

It tells the robot both direction and distance.

3. $D \rightarrow C \rightarrow B \rightarrow A$ (Plan the steps; Build the program; Run it; Compare the result with the goal)

Testing comes after building, followed by checking.

Project evidence to review

Write a paper algorithm that moves a counter three squares right. Ask a partner to follow it exactly.

- ☐ State the starting position
- ☐ Give a complete ordered sequence
- ☐ Compare the actual path with the intended path

Discuss the explanation

Why can the order of instructions matter?

Possible response: Each step acts on the position left by the previous step, so changing the order can change the path.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Find two different sequences that reach (2,2).

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 4 / CODING EXPLORERS / LESSON 2

Repeat a useful pattern

Student workbook pages 35-36 • Approximately 40 minutes

Learning goal: Replace repeated instructions with a fixed-count loop.

Practice answers and reasons

1. 3

The repeated action runs three times.

2. A. Repeat Down 3

The action and count both match.

3. 4

 $2 + 2 = 4$.

Project evidence to review

Create a repeated clap-and-tap pattern on paper. Write it once using a repeat count and once in full.

- ☐ Identify the repeating action or group
- ☐ Choose the correct repeat count
- ☐ Show that both versions have the same result

Discuss the explanation

When does a repeat block make a program easier to read?

Possible response: When the same action or group of actions occurs several times, a repeat block shows the pattern clearly.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Describe a pattern with two different actions inside each repeat.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 4 / CODING EXPLORERS / LESSON 3

Events start actions

Student workbook pages 37-38 • Approximately 40 minutes

Learning goal: Identify the event that starts a program.

Practice answers and reasons

1. A. A button being pressed

The button press can trigger a response.

2. B. At the beginning

The first block identifies the start of the program.

3. A. Clicking the green flag

The block responds to that event.

Project evidence to review

Design two event-action pairs for an imaginary helpful classroom device. Use drawings and labels, without building electrical hardware.

- ☐ Name each event clearly
- ☐ Describe the action it triggers
- ☐ Explain when the action should happen

Discuss the explanation

How is an event different from a movement instruction?

Possible response: An event triggers the program; a movement instruction tells it what to do after it starts.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Suggest a sensible response if the same event happens again.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 4 / CODING EXPLORERS / LESSON 4

Make a decision with a condition

Student workbook pages 39-40 • Approximately 40 minutes

Learning goal: Predict an if/else decision from the current situation.

Practice answers and reasons

1. B. No

The next right square contains the wall.

2. B. Down

The condition is false, so the else action runs.

3. B. When the decision instruction runs

The situation may have changed after earlier instructions.

Project evidence to review

Draw a simple flowchart for If it is raining, take an umbrella; else wear a sun hat when appropriate. Discuss how a real decision may need more information.

- ☐ Write a condition that can be checked
- ☐ Show the two possible branches
- ☐ Explain the branch chosen in one example

Discuss the explanation

Why does the same decision block sometimes choose a different action?

Possible response: The condition may be true in one situation and false in another.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Suggest what the robot should do if both possible directions are blocked.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 4 / CODING EXPLORERS / LESSON 5

Debug a robot delivery

Student workbook pages 41-42 • Approximately 40 minutes

Learning goal: Find an error, test a correction and explain the improvement.

Practice answers and reasons

1. 1

 $0 + 1 = 1.$

2. 2

 $3 - 1 = 2.$

3. B. The robot was two rows short; I added two Down moves and retested

It identifies the error, change and evidence.

Project evidence to review

Make a delivery program to reach (3,3). Save the program text in your portfolio with a short debugging note.

- ☐ Reach the stated goal from the start
- ☐ Use clear, working instructions
- ☐ Explain a tested correction or a deliberate test case

Discuss the explanation

What evidence shows that your correction worked?

Possible response: Running from the original start now ends on the goal marker, with the expected path.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Find a second working program and compare which is easier to understand.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 5 / SMART INFORMATION USERS / LESSON 1

Ask a useful research question

Student workbook pages 43-44 • Approximately 40 minutes

Learning goal: Turn a broad topic into a question you can investigate.

Practice answers and reasons

1. B. How do roots help a tree?

It identifies a specific thing to investigate.

2. A. tree roots functions

These words match the subject and purpose.

3. B. No; check whether the information answers the question

Relevance depends on the information, not just the image.

Project evidence to review

Make a research plan with one question, keywords and two types of sources you could ask an adult to help you find.

- ☐ Ask a focused question
- ☐ Choose relevant keywords
- ☐ Plan to use appropriate sources

Discuss the explanation

How will you decide whether a source is relevant?

Possible response: I will check whether its information actually helps answer my question.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Narrow the question further if it would take too long to answer.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 5 / SMART INFORMATION USERS / LESSON 2

Fact, opinion and evidence

Student workbook pages 45-46 • Approximately 40 minutes

Learning goal: Distinguish a checkable claim from a personal preference.

Practice answers and reasons

1. B. This is the most exciting story

Most exciting is a judgement that people may disagree about.

2. B. No; it still needs checking

A checkable statement can still be inaccurate.

3. B. A relevant official notice

A relevant official notice provides evidence for the time.

Project evidence to review

Write four statements about a book or classroom activity. Label two as checkable claims and two as opinions; name evidence for one claim.

- ☐ Distinguish claims from preferences
- ☐ Avoid treating all claims as true
- ☐ Name evidence that could check a claim

Discuss the explanation

Why is an opinion different from an incorrect factual claim?

Possible response: An opinion is a judgement or preference. A factual claim attempts to describe something checkable and can be wrong.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Find a sentence that mixes a fact and an opinion, and separate the parts.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 5 / SMART INFORMATION USERS / LESSON 3

Check the source and compare

Student workbook pages 47-48 • Approximately 40 minutes

Learning goal: Use source, date and evidence to judge a claim.

Practice answers and reasons

1. A. A current official notice

Current information for the correct event is most relevant.

2. B. No

Copied claims can share the same original mistake.

3. B. How does the author know?

The basis of the claim matters more than decoration.

Project evidence to review

Write a source-checking card: Who? When? What evidence? Does another suitable source agree? Apply it to the fictional cards.

- ☐ Identify relevant source information
- ☐ Check whether the evidence supports the claim
- ☐ Explain a limitation or missing detail

Discuss the explanation

Why can two sources agree and still be wrong?

Possible response: They may have copied the same error or relied on the same weak evidence.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain what you would do if two suitable sources disagreed.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 5 / SMART INFORMATION USERS / LESSON 4

Protect privacy and ask for help

Student workbook pages 49-50 • Approximately 40 minutes

Learning goal: Choose safe responses to requests for personal information.

Practice answers and reasons

1. B. Stop and tell a trusted adult

Passwords are private; get help with suspicious requests.

2. B. Check permission and school/adult guidance

Respect the person's privacy and the sharing rules.

3. A. Ask a trusted adult for help

A trusted adult can help you respond and use appropriate reporting tools.

Project evidence to review

Create a Stop, Check, Ask card. Include three pieces of information to protect and a safe response to one pretend message.

- ☐ Identify private information
- ☐ Avoid sharing or following suspicious requests
- ☐ Know how to seek trusted adult support

Discuss the explanation

What would you say to an adult if a message worried you?

Possible response: I received this message and I am unsure whether it is safe. Please help me check it before I respond.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain why protecting a friend's information matters too.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 5 / SMART INFORMATION USERS / LESSON 5

AI answers need human checking

Student workbook pages 51-52 • Approximately 40 minutes

Learning goal: Check a generated answer and take responsibility for your work.

Practice answers and reasons

1. 24

 $4 \times 6 = 24$, so the pretend AI answer was wrong.

2. B. No

Accuracy depends on evidence and checking, not confidence.

3. B. A general question with no private details

Use general information and protect privacy.

Project evidence to review

Make an AI checking checklist: check the question, verify facts or maths, look for unfair assumptions, and explain the final answer in your own words.

- ☐ Find and correct the example error
- ☐ Explain the evidence for the correction
- ☐ Protect privacy and take responsibility for the answer

Discuss the explanation

What remains your responsibility when a tool helps you?

Possible response: I must understand and check the work, protect personal information, and explain the final answer honestly.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Give an example of an AI suggestion that might be useful but still needs adult review.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 6 / YOUNG PROBLEM-SOLVERS / LESSON 1

Notice and define a problem

Student workbook pages 53-54 • Approximately 40 minutes

Learning goal: Describe a problem using observations and a clear goal.

Practice answers and reasons

1. B. Three pencils rolled off

It describes something that could be counted or seen.

2. B. After understanding the problem and goal

A solution should respond to the actual problem.

3. B. Keep five pencils from rolling off during a short trial

It describes a specific observable result.

Project evidence to review

Create a problem card with one observation, the person or group needing help, and a testable goal.

- ☐ Separate observations from guesses
- ☐ Describe a small manageable problem
- ☐ Write a goal that can be checked

Discuss the explanation

How will you know whether the problem has improved?

Possible response: I will compare the result with the specific goal, using the same kind of observation.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Suggest another possible cause before choosing a solution.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 6 / YOUNG PROBLEM-SOLVERS / LESSON 2

Plan with time and a budget

Student workbook pages 55-56 • Approximately 40 minutes

Learning goal: Choose materials within a simple budget and organise tasks.

Practice answers and reasons

1. 35

$$2 \times 10 + 15 = 35.$$

2. 15

$$50 - 35 = 15.$$

3. B. Revise materials or design and recalculate

Revise the plan honestly so it fits the constraint.

Project evidence to review

Plan a paper model with a pretend budget of 50 units. Use the planner to record materials, cost, roles and time.

- ☐ Calculate the total correctly
- ☐ Keep the plan within the stated limits
- ☐ Break the work into manageable tasks

Discuss the explanation

Which trade-off did you make in your plan?

Possible response: I chose an option that still meets the goal while using fewer materials, less money or less time.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Plan an alternative with a budget of 40 and explain what changes.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 6 / YOUNG PROBLEM-SOLVERS / LESSON 3

Make and test a paper bridge

Student workbook pages 57-58 • Approximately 40 minutes

Learning goal: Compare two paper designs using a simple fair test.

Practice answers and reasons

1. A. Paper size and gap

Keep relevant conditions consistent while changing the design feature.

2. B. To notice variation and check the result

Results can vary, so repeated trials give more evidence.

3. B. Recorded and investigated

Honest evidence includes unexpected outcomes.

Project evidence to review

Draw two bridge designs and record trial results in a small table. If making is unavailable, plan the test on paper and label it Not yet tested.

- ☐ State what changes and what stays the same
- ☐ Record actual results or clearly mark an untested plan
- ☐ Use evidence to compare the designs

Discuss the explanation

What makes your comparison fair, and what might affect the result?

Possible response: I keep paper size, gap and counters consistent. Small differences in folds or counter placement may still affect the result.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Plan another test that changes only one design feature.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 6 / YOUNG PROBLEM-SOLVERS / LESSON 4

Share roles and improve together

Student workbook pages 59-60 • Approximately 40 minutes

Learning goal: Work with a partner and use evidence to decide a next step.

Practice answers and reasons

1. A. So everyone can practise different responsibilities

Different roles give each learner useful practice.

2. B. Let us compare our reasons and test one change

It invites evidence and respectful collaboration.

3. B. Offer a hint and listen to what they need

Support can help them learn and participate.

Project evidence to review

Complete a small shared task or role-play one with an adult. Record roles, one disagreement handled respectfully and one improvement.

- ☐ Share clear responsibilities
- ☐ Listen and explain reasons respectfully
- ☐ Record a jointly agreed improvement

Discuss the explanation

How did you make space for another person's idea?

Possible response: I let them explain, repeated what I understood, and considered their evidence before deciding together.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Explain how you would include a teammate who communicates in a different way.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____

COURSE 6 / YOUNG PROBLEM-SOLVERS / LESSON 5

Show what you can do

Student workbook pages 61-62 • Approximately 40 minutes

Learning goal: Present a project with evidence, limitations and a next step.

Practice answers and reasons

1. B. Our design held more counters in these trials

The claim is limited to the evidence collected.

2. $D \rightarrow C \rightarrow B \rightarrow A$ (Describe the problem; Explain the plan and action; Show the evidence; Describe an improvement)

This sequence connects the goal to what was learned.

3. B. I found a weak part, changed it and will test again

A tested revision shows learning from a difficulty.

Project evidence to review

Prepare a mini exhibition: one project, a short explanation, evidence, and a next-step card. Invite feedback from a trusted adult or classmate.

- ☐ Explain the connection between problem and solution
- ☐ Show evidence and acknowledge a limitation
- ☐ Describe an improvement and a realistic next goal

Discuss the explanation

What can you now do independently, and where would help still be useful?

Possible response: A good answer names a specific skill, points to evidence, and honestly identifies a part needing support.

Accept equivalent correct reasoning and ask the learner to connect it to their own work. Correct misunderstandings using the example; do not treat matching wording as understanding.

Support and extension

Support: model the first practical step, offer a sentence starter, or let the learner draw and explain aloud before writing. Ask them to do the next step.

Stretch: Apply the same planning-and-testing process to a new small problem.

Observed: [] With help [] Independently [] Transfer to a new task

Evidence / next teaching step: _____