



MODULE 01 | TEACHER GUIDE

Riverside Water Mystery

Water our most valuable resource | English B1–B2 | Ages 15–18 | 45 minutes

Why does a closed school use water? In this fictional mystery, students read clues, calculate water use and suggest what the caretaker should check. They explore the school's connection to the ocean and create a short illustrated poster.

Learning outcomes

Students can describe a simple water route, find key information in short texts and use numbers to support an explanation. They can separate a fact from a possible explanation and suggest a practical action.

Lesson sequence

Time	Activity	Product
0–4 min	Show the school board on p. 3. Ask: where could water be used?	First ideas
4–13 min	Read p. 2 in pairs. Use the word bank and complete the water routes.	Completed diagram
13–23 min	Teams use the board on p. 3, clue cards on p. 4 and tasks on p. 5.	Calculations and explanation
23–37 min	Create the three-part poster on p. 6. Use the sentence starters.	Illustrated poster
37–43 min	Swap posters. Check one water route, one number and one action. Improve one sentence.	Revised poster
43–45 min	Compare explanations. What do we know? What should staff check next?	Class discussion

Preparation

Print pp. 2–6 for each team; keep p. 7 for answers. Print the cards on p. 4 single-sided, cut along the dashed lines and shuffle. Provide pens, calculators and optional coloured pencils.

Support and challenge

B1 support: read the clues aloud, use the word bank and sentence starters, and work through the first calculation together. Give each student a role: clue reader, calculator or writer. All students discuss the final answer.

B2 challenge: explain a second possible cause, complete the percentage question and use “although” or “however” to show what the evidence cannot tell us. The language target is a reasoned explanation, not just a correct calculation.

Keep access to drinking water and handwashing unchanged. Only authorised staff may inspect equipment or pipes. This lesson uses invented data and does not require a real school inspection.

Ocean Literacy principles 1 and 6: connected water systems and the relationship between people and the ocean.



STUDENT SHEET 1 | FOLLOW THE WATER

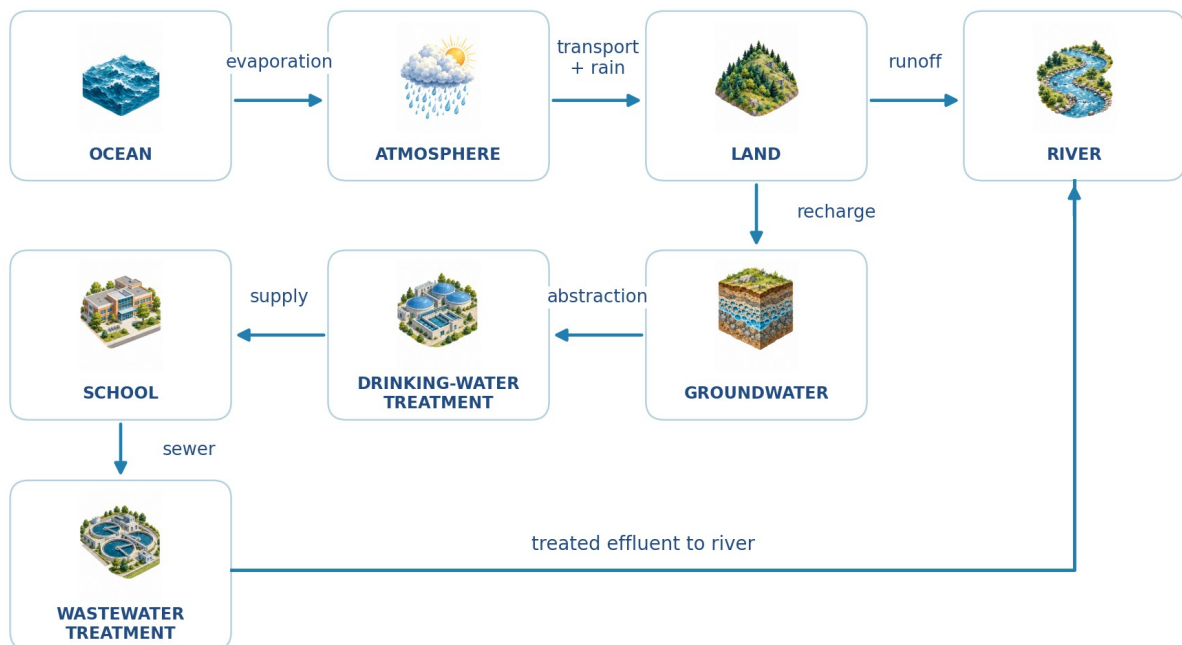
From school to sea

Earth has a lot of water, but we cannot drink all of it. Much is salty, frozen or difficult to reach. We need clean water in the right place at the right time. [1]

Water moves between the ocean, the air and the land. It rises into the air as water vapour and falls as rain or snow. Some flows into rivers. Some enters the ground and becomes groundwater. Groundwater can also flow into rivers. [1]

In this story, Riverside School gets groundwater that has been treated to make it safe to use. After use, the water goes through a sewer to another treatment centre. There it is cleaned before it enters a river and flows to the sea. Water stays in the water cycle, but it may no longer be clean or available where we need it.

A water meter measures how much water a building uses. It can show that water was used, but it cannot tell us why. To find the cause, we must check other information too. [2]



This diagram shows the fictional school system. Two connections are missing.

1 Add arrows from the river to the ocean and from groundwater to the river. 2 Follow one route through the school. Explain it to your partner: "First ... Then ... Finally ..."

Word bank

evaporation: water changes into vapour • runoff: water flows over land • recharge: water enters underground stores • abstraction: taking water from a river or the ground • treatment: cleaning water • effluent: water leaving a treatment centre • sewer: a pipe carrying used water

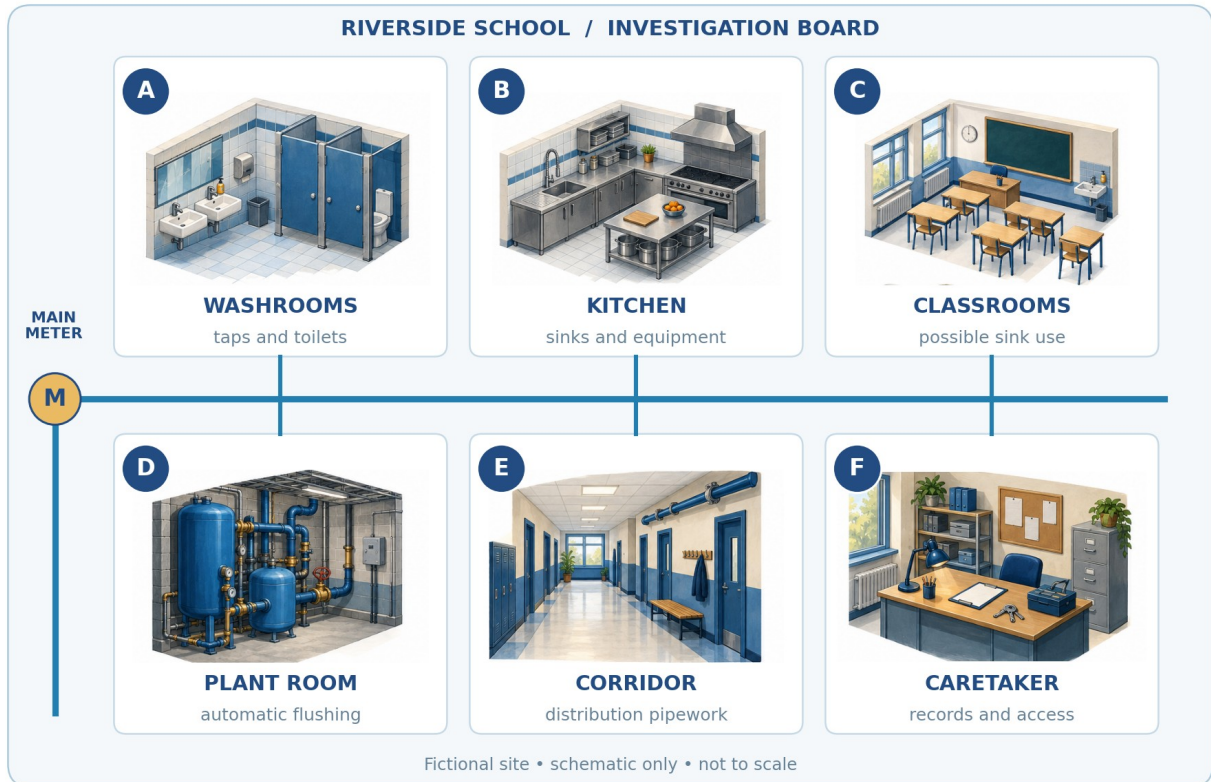
Discuss: "Our school is far from the sea, so saving water does not matter." Do you agree? Give one reason.



STUDENT SHEET 2 | EXPLORE THE SCHOOL

Where did the water go

Riverside School used water over the weekend. The records show nobody in the building. Your team must help the caretaker find out why. This school and all its records are invented for the activity.



Look at the rooms. Where might water be used? Choose two places for staff to check. The pictures show possible water-use points; they do not prove where water was used.

Plan your investigation

Match the clue cards on p. 4 to a place on the board. Some cards are about the whole school. Put a question mark where more information is needed.

We would ask staff to check _____ because _____.

We need to find out whether _____.

caretaker: a person who looks after a building • plant room: a room with technical equipment • records: written information • leak: water escaping from a pipe or tap



STUDENT SHEET 3 | CUT-OUT CLUE DECK

Six clues one mystery

01



FRIDAY READING

Friday 18:00
Main meter: 2,480.000 m³

RIVERSIDE WATER MYSTERY

02



MONDAY READING

Monday 06:00
Main meter: 2,493.200 m³

RIVERSIDE WATER MYSTERY

03



SITE LOG

The school records show no students, visitors or cleaners in the building that weekend.

RIVERSIDE WATER MYSTERY

04



AUTOMATIC USE

A system cleans pipes automatically. It used 2,400 litres during the first weekend.

RIVERSIDE WATER MYSTERY

05



A POSSIBLE LEAK

The caretaker thinks a pipe may lose 3 litres every minute. Nobody has measured this possible leak yet.

RIVERSIDE WATER MYSTERY

06



THE NEXT CHECK

After a building check, the next 60-hour weekend used 3,000 L: 2,400 L for the automatic system. No people were recorded. The check report is incomplete.

RIVERSIDE WATER MYSTERY

Cut along the dashed lines. Sort the cards: recorded facts / a possible explanation / information from the next check. All records are fictional.



STUDENT SHEET 4 | SOLVE THE MYSTERY

What do the numbers tell us



Use the six cards. Work with a partner and show your calculations.
Useful units: 1 m³ = 1,000 litres. 1 hour = 60 minutes.

1 Find the water use

Friday 18:00 to Monday 06:00 = _____ hours = _____ minutes.
Meter difference: 2,493.200 – 2,480.000 = _____ m³ = _____ litres.
Subtract the automatic system's 2,400 litres: _____ litres are still unexplained.

2 Test the caretaker's idea

If a leak loses 3 litres every minute, it loses 3 × _____ minutes = _____ litres. Does this match your unexplained amount? Does a matching number prove there was a leak? Explain.

"The numbers match, but we still need to check ..."

3 Look at the next weekend

Both weekends lasted 60 hours. How much lower was the second weekend's total?
13,200 – 3,000 = _____ litres less.
How much is still unexplained? 3,000 – 2,400 = _____ litres.
What would you ask the caretaker about the building check?

B2 challenge: Calculate the percentage decrease. Use: decrease ÷ first total × 100.

4 Decide what we know

Write F = supported by facts, P = possible but not proved, or N = not supported.

- ___ The school used water over the weekend.
- ___ A leak caused the unexplained water use.
- ___ The school has solved every water-waste problem.

Choose one answer and explain: "We know ... because ..." or "It may be ..., but ..."

Use the meter readings as correct for this activity. "Unexplained" means we do not know the cause yet; it does not always mean waste.



STUDENT SHEET 5 | CREATE A POSTER

Tell the water story

Create a three-part poster called “The missing water” for other students. Draw a simple picture and write 20–30 words in each part. Include one correct number, one possible explanation and one action. Show what we know and what we still need to check.

Sentence starters: “Our water comes from ...” • “The meter shows ...”
“There may be ..., but ...” • “We suggest ... because ...”

1 FOLLOW THE WATER

Sketch + arrows

Caption • 20–30 words

2 SHOW THE CLUES

Sketch + arrows

Caption • 20–30 words

3 SUGGEST AN ACTION

Sketch + arrows

Caption • 20–30 words

Make your action clear

On separate paper, add 2–3 sentences. Who should act? What should they do? When and how should they check the result? Keep drinking water and handwashing available.

Check with another team

Can you follow the water route? Is the number correct? Is the action clear? Does the poster say that a possible leak is only an idea? Suggest one improvement, then revise your own poster.

B2 challenge: Give a second possible explanation. Use “although” or “however” to explain why you cannot be certain.



TEACHER SHEET | ANSWERS AND SOURCES

Answers and model language

Water routes and school board

Add river → ocean and groundwater → river. Possible school route: groundwater → drinking-water treatment → school → sewer → wastewater treatment → river → ocean. Saving water matters inland too: clean water is needed locally, and rivers connect inland places to the ocean. Water in the cycle is not always clean or available where needed.

Board: A could be checked for running taps or toilets; D for automatic use. Accept other justified ideas. Cards 01–02 belong to M, 03 to building records, 04 to D, 05 has no known location, and 06 concerns the whole school. Sorting: 01–04 recorded facts; 05 a possible explanation; 06 the next check.

Calculations and conclusions

1 Time: 60 hours = 3,600 minutes. Meter difference: $13.200 \text{ m}^3 = 13,200 \text{ litres}$. Unexplained amount: $13,200 - 2,400 = 10,800 \text{ litres}$.

2 Possible leak: $3 \times 3,600 = 10,800 \text{ litres}$. The numbers match, but the flow rate is only an estimate. A second automatic process or missing information about people in the building could also explain some water use.

3 Decrease: $13,200 - 3,000 = 10,200 \text{ litres}$. Still unexplained: $3,000 - 2,400 = 600 \text{ litres}$. B2 challenge: $10,200 \div 13,200 \times 100 \approx 77.3\%$. Ask what staff found, whether anything was repaired and whether equipment settings changed. The lower total alone does not prove the check caused the change.

4 F / P / N. The meter supports the first statement. A leak is possible but unconfirmed. Two weekends cannot show that every problem is solved. The final 600 litres are unexplained, not necessarily wasted.

Example poster captions

1 Our school gets water from underground. It is treated before it reaches our taps. After use, it is cleaned again and flows towards the sea.

2 The school used 13,200 litres over one weekend. A leak may explain some of this, but staff need to measure it and check other causes.

3 Tell the caretaker about dripping taps. Ask staff to check the pipes and record water use over two more weekends. Keep drinking water and handwashing available.

Action note: The caretaker could record any repairs and compare the next two weekends with the first one. Staff should also check who uses the building and how much water the automatic system uses.

Assessment

Give 0–2 points each for the water route, correct numbers, facts versus ideas, a practical action and clear English (10 total). B1: understandable linked sentences, supported by the word bank. B2: more detailed reasons, alternative explanations and appropriate use of “may”, “although” or “however”.

Sources

[1] USGS. Water cycle. <https://www.usgs.gov/water-science-school/water-cycle>

[2] US EPA. WaterSense: Getting Started. <https://www.epa.gov/watersense/getting-started>

Last visited: 13 October 2026.