



## MODULE 06 | TEACHER GUIDE

# WaterWise Campus

The Refill Challenge | English B1–B2 | Ages 15–19 | 60–75 minutes

A school has four refill stations, but many attempts to use them fail. Teams investigate the evidence, choose improvements and write a clear school notice. They learn that safe water must also be easy to reach and use.

## Learning outcomes

Students explain links between water, health and fair access; calculate simple completion rates; identify barriers; and support a practical proposal with evidence. They avoid making health claims that the data cannot support.

## Lesson sequence

| Minutes | Activity                                                  | Purpose              |
|---------|-----------------------------------------------------------|----------------------|
| 0–8     | Read the health brief and challenge three claims.         | Evidence and health  |
| 8–18    | Interpret the campus log and calculate rates.             | Data literacy        |
| 18–30   | Match evidence cards to barriers and missing information. | Access diagnosis     |
| 30–43   | Choose and justify a six-token improvement package.       | Reasoned priorities  |
| 43–53   | Draft the notice and a two-week review.                   | Public communication |
| 53–60   | Exchange plans and challenge one unsupported conclusion.  | Revision             |

## Preparation and differentiation

Print pp. 2–6 for teams of four; retain p. 7. Cut out the evidence and action cards on pp. 4–5. Provide calculators and paper for extended responses. Roles: data analyst, access adviser, operations adviser and communication lead.

B1: divide the four evidence cards between partners, use the word bank and sentence frames. B2: explain one limitation of the observation and compare a rejected option.

## Extension or final phase

Optional 15 minutes: exchange notices with another team. Check that every factual statement matches the case and that the message is easy to understand.

All names, observations, quotations and costs are fictional. This is a desk-based investigation: no water tasting, sampling, plumbing work or collection of personal health data is required. Safety arrangements are fixed case conditions, not optional budget choices.

Ocean Literacy connection: the ocean and people are linked through shared water systems. The activity connects school water access with health, inclusion and responsible water management.



STUDENT SHEET 1 | SCIENCE AND CLAIMS

## Water access and health

Your team advises the school. Find out why refill attempts failed, then choose a realistic way to improve access. Use the evidence rather than guessing what students should do.

### Water and the body

Water helps the body work normally, including controlling body temperature. Access to drinking water helps students stay hydrated and offers an alternative to sugary drinks. Water needs vary, for example with activity and hot weather. This task does not set a drinking target for individuals. [1, 2]

### Safety needs evidence

Safe drinking water and good hygiene support health. Harmful germs or chemicals can make water unsafe, but you cannot always see, smell or taste them. Clear water is not proof of safety. Staff must manage the supply and respond to concerns through the school's procedures. [3, 4]

### Access includes everyone

A refill station is useful only if people can reach it, understand the information and use it when needed. Schools also need reliable maintenance and suitable hygiene arrangements. Information campaigns can help, but they cannot replace working facilities or remove steps. [1, 5]

### From the ocean to our school

Freshwater and the ocean are connected by the water cycle. Water evaporates, returns as rain or snow, and moves through land and rivers. This natural cycle does not guarantee that water is safe to drink: treatment and management still matter. [3, 6]

### Word bank

refill = fill again • barrier = something that makes access difficult • completion rate = completed attempts divided by all attempts • maintenance = work to keep equipment in good condition • evidence = information supporting an explanation

### Challenge the claims

Discuss each claim. Is it supported, contradicted or not established by the brief? Correct the inaccurate parts.

1 "If water looks clear, it is safe."

2 "A refill station is enough, even if some students cannot reach it."

3 "A low refill count proves that students are dehydrated."

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STUDENT SHEET 2 | CAMPUS INVESTIGATION

## What happened on Monday



Schematic station dashboard, not a route map. Dark bars show the share of observed attempts completed.

### Read the log carefully

Observers recorded one 20-minute break at each station on the same Monday. An attempt began when someone joined a queue or approached to refill; completion meant obtaining water there. A person could appear more than once. These are attempts, not unique students or litres consumed. People who avoided a station entirely may be missing.

| Station       | Attempts | Completed | Completion rate |
|---------------|----------|-----------|-----------------|
| A Sports hall | 40       | 16        | _____ %         |
| B Library     | 30       | 24        | _____ %         |
| C Courtyard   | 20       | 0         | _____ %         |
| D Cafeteria   | 30       | 24        | _____ %         |
| TOTAL         | _____    | _____     | _____ %         |

- 1 Calculate the completion rate at A, B, C and D:  $\text{completed} \div \text{attempts} \times 100$ .
- 2 Calculate the overall rate using the totals, not the average of the four rates.
- 3 Which station has most uncompleted attempts? Does this prove poor water quality?

### Use the evidence

Connect two barriers to an evidence card. Explain one thing the log does not tell you. Use a separate sheet if needed.

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## STUDENT SHEET 3 | CUT-OUT EVIDENCE

## Four places four experiences

**A SPORTS HALL****16 / 40** completed / attempts

During Monday's break, the queue stretched beyond the door. Several students left when the bell rang.

*"I reached the front after the break ended." — student*

A short break may limit access. These notes do not tell us how much anyone drank later.

MONDAY OBSERVATION / FICTIONAL EVIDENCE

**B LIBRARY****24 / 30** completed / attempts

The direct route has steps. A longer step-free route exists, but signs do not identify it. The station itself is accessible.

*"I did not know there was another route." — wheelchair user*

A route can exist yet remain hard to find. The log does not identify users' access needs.

MONDAY OBSERVATION / FICTIONAL EVIDENCE

**C COURTYARD****0 / 20** completed / attempts

Staff closed this station for a maintenance check. The closure notice was only visible beside the tap. No water-quality result is supplied.

*"I walked all the way here before seeing the notice." — student*

Closure is not proof of contamination. Keep it closed until the responsible staff authorise reopening.

MONDAY OBSERVATION / FICTIONAL EVIDENCE

**D CAFETERIA****24 / 30** completed / attempts

An old sign read "Refill €0.50". Refills were actually free. A few students also arrived without a bottle.

*"I thought I had to pay." — student*

The sign may discourage use, but the log does not prove why each attempt failed.

MONDAY OBSERVATION / FICTIONAL EVIDENCE

Match each card to the dashboard. Separate an observed fact from a possible explanation. The quotations offer clues; they do not represent every user. Cut on the dashed lines.



## STUDENT SHEET 4 | CUT-OUT ACTIONS

## Choose improvements that fit

The next-day baseline on p. 6 is already funded. These fictional costs cover an additional two-week pilot, including staff time and materials. Effects are not quantified or guaranteed. Choose up to three cards within six tokens.

|                                                                                                                                                                                                                    |                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1 CLEARER ACCESS</b><br/><b>COST 3 TOKENS</b></p> <p>Mark the existing step-free route to B.<br/>Test the route information with users.</p> <p>Owner: facilities team. Does not shorten the route.</p>       | <p><b>2 TIME TO REFILL</b><br/><b>COST 2 TOKENS</b></p> <p>Trial staggered refill access around PE lessons at A for two weeks.</p> <p>Owner: PE team. Timetable changes need coordination.</p>                         |
| <p><b>3 BETTER INFORMATION</b><br/><b>COST 1 TOKEN</b></p> <p>Add clear, multilingual free-water and closure signs before students reach stations.</p> <p>Owner: school office. Signs cannot repair a station.</p> | <p><b>4 RELIABILITY CHECK</b><br/><b>COST 3 TOKENS</b></p> <p>Add a two-week service log and follow-up of faults at all stations.</p> <p>Owner: caretaker. This supplements required maintenance.</p>                  |
| <p><b>5 CUPS FOR EVERYONE</b><br/><b>COST 2 TOKENS</b></p> <p>Trial reusable cups at D with staff-managed collection, washing and storage.</p> <p>Owner: catering team. Cleaning and staffing are essential.</p>   | <p><b>6 STUDENT CAMPAIGN</b><br/><b>COST 2 TOKENS</b></p> <p>Run student-designed posters and short messages about available refill points.</p> <p>Owner: student council. Promotion alone cannot remove barriers.</p> |

Read the scope and limitation before choosing. Required safety measures do not depend on your choice. Costs are classroom tokens, not real prices. Do not invent numerical savings or health effects.



STUDENT SHEET 5 | DESIGN AND COMMUNICATE

## A fairer refill plan

### Tuesday baseline already in place

The school has removed the incorrect price sign and made free drinking water available at reception via a verified step-free route, with suitable drinking vessels. Responsible staff have checked this temporary provision through the school's procedures. C stays closed pending authorised reopening; required checks and maintenance continue. Report problems to reception. These arrangements are outside your six-token budget.

Choose up to three action cards costing no more than six tokens. Address at least two barriers shown in the evidence. You do not have to spend every token. Explain why your plan helps people use water safely and fairly.

| Action number | Cost      | Barrier and evidence card     |
|---------------|-----------|-------------------------------|
| _____         | _____     | _____                         |
| _____         | _____     | _____                         |
| _____         | _____     | _____                         |
| TOTAL         | _____ / 6 | One unresolved barrier: _____ |

### Defend the choice

Our plan helps ... because card ... shows ...

We did not choose ... because ...

One problem that still needs attention is ...

### Write the school notice

Write a 60–80-word school notice. State that refills are free, identify the temporary water point, explain that C remains closed and tell students where to report a problem. Avoid promising that no risk exists.

Draft on a separate sheet. Use only the case facts. Do not announce a reopening date or a test result: neither is provided.

### Check whether access improves

Choose two measures to review after two weeks, such as waiting times or whether people can find the accessible route. Repeat observations at similar times. A higher refill count alone does not prove better health.

Indicator 1 and method: \_\_\_\_\_

Indicator 2 and method: \_\_\_\_\_



## TEACHER SHEET | ANSWERS AND SOURCES

# Interpretation and suggested responses

## Claims and calculations

Claims 1 and 2 are contradicted by the brief: appearance cannot establish safety, and physical provision alone does not establish equitable access. Claim 3 is not established. Low use is an access observation, not a diagnosis. Relevant additional evidence includes appropriate quality assessment, user access feedback and information beyond this log; students should not collect clinical data.

Rates: A 40%; B 80%; C 0%; D 80%. Total 120 attempts, 64 completions, 56 uncompleted attempts; pooled rate  $64 \div 120 \times 100 = 53.3\%$ . The unweighted mean is 50%, which gives each station equal weight despite different numbers of attempts. A has the largest absolute shortfall (24); C has the lowest rate. Neither establishes contamination or dehydration.

## Barriers and defensible packages

A: queues and timing; B: poor information about the step-free route; C: closure and late notice; D: price misinformation and lack of a bottle. Quotes support plausible explanations but do not identify the cause of every failure. Repeated users, other water sources, observation timing and people deterred before approaching limit interpretation.

Example 1 + 2 + 3 costs six tokens: it addresses the route to B, timing at A and advance information. Example 2 + 3 + 5 costs five: it supports A, information across the campus and vessel access at D. Either can be justified; the latter leaves B's route-specific improvement unresolved. A campaign-only plan does not meet the two-barrier requirement. No option can authorise C's reopening.

## Model notice and review

"Refills at school are free. While we improve access, drinking water and suitable drinking vessels are available at reception via the step-free route. The courtyard station remains closed for a maintenance check. Please use the temporary point and follow staff directions. We do not yet have a reopening date. Tell reception if you cannot reach a refill point, find a misleading sign or notice a problem. Your feedback will help us improve the service."

Review example: measure queue waiting time at A before and during the pilot at comparable breaks; ask users to test whether the B route information is understandable. Include people who did not attempt a refill through voluntary, anonymous access feedback. Weather, timetable changes and publicity may affect results. Improved completion or awareness does not establish a health effect.

Award 0–2 each for calculations, use of evidence, feasible choices, a clear accurate notice and B1–B2 communication. Accept different packages if justified. Do not award points for claiming that low use diagnoses dehydration.

## Sources

- [1] CDC. Water Access in Schools. <https://www.cdc.gov/school-nutrition/water-access/>
  - [2] CDC. About Water and Healthier Drinks. <https://www.cdc.gov/healthy-weight-growth/water-healthy-drinks/>
  - [3] WHO. Drinking-water. <https://www.who.int/news-room/fact-sheets/detail/drinking-water>
  - [4] CDC. About Choosing Home Water Filters. <https://www.cdc.gov/drinking-water/prevention/about-choosing-home-water-filters.html>
  - [5] WHO Europe. WASH in schools. <https://www.who.int/europe/health-topics/water-sanitation-and-hygiene-wash/ensuring-water-sanitation-and-hygiene-in-schools>
  - [6] NOAA. The water cycle. <https://www.noaa.gov/education/resource-collections/freshwater/water-cycle>
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