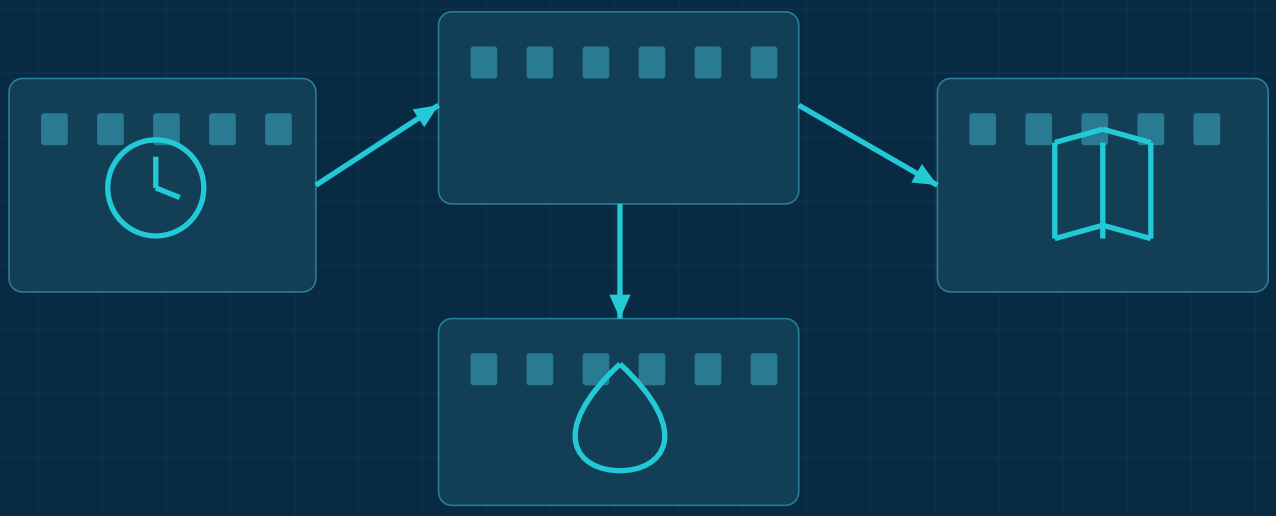
EU4BLUE / A COOPERATIVE PAPER ESCAPE GAME

THE LAST DROP

CAMPUS COUNTDOWN

The festival is ready.
The dashboard is locked.
The missing water is your lead.

T - 45:00



HOST GUIDE

AGES 15+ / 3–5 PLAYERS / 60–75 MIN / C1

A4 / SINGLE-SIDED / PRINT AT 100% / NO APP NEEDED

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Open the box

HOST ONLY / PRINT, CUT AND PREPARE

Format: 60–75 minutes, ages 15+, teams of 3–5. Allow 5 minutes briefing, 45–55 minutes play and 10–15 minutes discussion. Start with a visible 45-minute timer; extend it if needed.
Learning: evaluate records, apply units, distinguish hypotheses from proof, trace a source-to-sea pathway and justify a practical response.

PER TEAM / PRINT CHECKLIST

Print P01–P11 once, single-sided at 100%. Cut P03 role cards, P04 records, P07 place cards and P09–P10 response cards. Keep each instruction strip with its deck. Provide six envelopes, pens and a calculator; no internet, device or physical lock is required.

Give at start	Seal until unlocked
P01 briefing + P02 mission board	1: P04 / Engineer’s log
P03 role cards	2: P05 / Campus route
A calculator and pens	3: P06 / Meter desk
One host copy of H01–H08	4: P07 + P08 / Water network
One cut H03 update per team	5: P09 + P10 / Response deck
Optional: visible classroom timer	FINAL: P11 / Release console

Master = all host and player pages. Host Guide = this booklet only. Player Pack = cover + P01–P11. Keep H03’s update separate from envelopes until File 3 is accepted. Never give players H06 solutions.

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Run it like a live mission

HOST ONLY / PACING, HAND-OFFS AND ACCESSIBILITY

00 / BRIEF + CAST

Read P01. Give each team a call sign. Students choose roles; with three, combine Navigator and Reporter. With five, add a second checker. Hand over File 1 and start the timer.

01–02 / KEEP THE STORY MOVING

Check a code and one sentence of reasoning. Release the next envelope immediately. Ask a different teammate to explain each answer. Rotate role cards after each file.

03 / THE PLOT TURN

After accepting File 3, give Mara’s update from H03 before File 4. Read it aloud if useful. Ask: “Does a lower reading prove that the first explanation was right?” Keep the update for File 5.

04–05 / BUILD THE RESPONSE

Teams assemble the water route, then select a response package. Require the package’s cost and a reason for rejecting one misleading report. Give P11 only after File 5.

FINAL / REVEAL

Accept the five-digit release and a brief evidence-based update. Read H07. If time runs out, pause the clock and run a supported finish using hints; no elimination or public ranking.

DESIGNED FOR PARTICIPATION

Hints have no penalty. Offer read-aloud support, dictionaries, larger print and written radio updates. Colour is decorative; labels carry the rules. All work can be done seated. Speed, accent and acting are not assessment criteria.

Facilitator target times: log 7 min / map 6 / audit 8 / route 7 / response 10 / console 7. These are pacing guides, not deadlines. Budget extra time for cutting if it is not done beforehand.

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Envelope labels + plot turn

HOST ONLY / CUT / RELEASE UPDATE AFTER FILE 03

01
ENGINEER'S LOG

OPEN WHEN THE HOST RELEASES IT

02
CAMPUS ROUTE

OPEN WHEN THE HOST RELEASES IT

03
METER DESK

OPEN WHEN THE HOST RELEASES IT

04
WATER NETWORK

OPEN WHEN THE HOST RELEASES IT

05
RESPONSE DECK

OPEN WHEN THE HOST RELEASES IT

FINAL
RELEASE CONSOLE

OPEN WHEN THE HOST RELEASES IT

NEW MESSAGE / MARA

An archived post-inspection record documents a comparable 60-hour period: 1,800 litres metered, including 1,200 litres of automatic flushing, with no occupancy logged. The inspection trail does not establish what, if anything, was modified or repaired.

"The reading fell. That matters. But I cannot certify a cause from these records. Do not announce a confirmed leak repair. Keep this message for the response deck."

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Hint desk / Files 1–3

HOST ONLY / TWO STEPS PER FILE / NO PENALTY

1 SUPPORT CARD

01 / HINT 1

A booking shows intention. Which records certify completion?

1 SUPPORT CARD

01 / HINT 2

Four jobs finished. Use 08:25 for the amended entry. Sort only completion times; the last badge becomes your pass.

2 SUPPORT CARD

02 / HINT 1

The pass is a badge, not the whole previous code. Apply it to the labelled links.

2 SUPPORT CARD

02 / HINT 2

One lower link needs a different pass. The middle diagonal is closed. Trace the upper route, then down to CONTROL.

3 SUPPORT CARD

03 / HINT 1

Find the difference between meter totals before converting units. Then remove logged automatic use.

3 SUPPORT CARD

03 / HINT 2

The meter difference is 8.400 m^3. Multiply by 1,000 and subtract 1,200. For the estimate, 60 hours equals 3,600 minutes.

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Hint desk / Files 4–Final

HOST ONLY / TWO STEPS PER FILE / NO PENALTY

4 SUPPORT CARD

04 / HINT 1

Two cards belong to other systems. Follow the pipe connections described in the records.

4 SUPPORT CARD

04 / HINT 2

Before the tap: water is treated for supply. After the sink: it enters a sewer and a different treatment plant, then the river.

5 SUPPORT CARD

05 / HINT 1

Choose by category and requirement, then add costs. Read Mara’s update before choosing a report.

5 SUPPORT CARD

05 / HINT 2

Compare 8,400 with 1,800 for the fall. Subtract 1,200 from 1,800 for the residual. Neither calculation proves a repair.

6 SUPPORT CARD

FINAL / HINT 1

Use complete accepted codes, including both zeroes in File 3. Digit positions start at the left.

6 SUPPORT CARD

FINAL / HINT 2

Take positions 2, 4, 1, 3, 2 from Files 1–5 respectively. Then read the five extracted digits downwards.

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The complete solution

HOST ONLY / DO NOT DISTRIBUTE DURING PLAY

01 / 3846 / PASS 6

Sensor badge 3: 08:10. Filter badge 8: corrected 08:25. Pump badge 4: 08:40. Lab badge 6: 08:55. Badge 1 is cancelled; badge 9 is aborted. Retain last badge 6 as the corridor pass.

02 / 5274

START → 5 → 2 → 7 → CONTROL 4. Pass 6 permits 5 → 2. The lower route requires pass 9; the diagonal 9 → 4 is closed. The directed graph has only this admissible start-to-control path.

03 / 7200

1,528.400 − 1,520.000 = 8.400 m³ = 8,400 L. Deduct 1,200 L to get 7,200 L unexplained. 60 × 60 × 2 = 7,200 L, so the estimated leak is arithmetically compatible but not demonstrated. Release H03's update now.

04 / 4826

4 drinking-water plant → 8 school tap/sink → 2 wastewater plant → 6 river. Well and ocean are endpoints, not coded cards. The bottle depot and rainwater tank are not connected to this sink route. Return flow does not automatically restore location, timing or quality.

05 / 9153 / COST 10

9 authorised inspection (3) + 1 comparable records (2) + 5 protected access (4) + 3 qualified report (1) = 10 credits. Reject student valve work, incomplete monitoring, withdrawing hygiene and a proven-repair claim. Fall: 8,400 − 1,800 = 6,600 L. Follow-up residual: 1,800 − 1,200 = 600 L.

FINAL / 84721

From 3846 take digit 2 = 8; 5274 digit 4 = 4; 7200 digit 1 = 7; 4826 digit 3 = 2; 9153 digit 2 = 1. Accept only with a reasoned radio update. Example: "7,200 litres were unexplained. A leak is possible but unproved; staff should inspect and compare records. Used school water reaches the sea through treatment and a river in this model."

Release accepted

FINAL REVEAL / READ ALOUD OR GIVE TO THE TEAM

RELEASE ACCEPTED

EVIDENCE VERIFIED / RESPONSE AUTHORISED

The countdown stops.
Your message reaches Mara.

“Good work. You did not mistake a booking for a completed check. You did not force a closed route. And you did not turn a matching number into a proven leak.”

FESTIVAL CONTROL / STORY ENDING

Mara confirms that staff have completed the necessary on-site checks and that drinking water and hygiene facilities are available. The festival can open. Your investigation continues through documented inspections and comparable meter readings.

The win is a justified plan, not a magically repaired system. The meter tells part of the story; your team knew when to ask for more evidence.

TEAM CALL SIGN

MISSION: COMPLETED TOGETHER

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Bring the mission back to school

Language edition: C1
Probe causal attribution, the reliability of corrected records and the comparability of baselines. Require precise qualification without excessive jargon.

All editions share the puzzle logic and codes. Briefings, evidence wording and response cards are adapted. Use separate tables to prevent overheard codes; do not compare teams by language level.

DISCUSS AFTER THE REVEAL

Which clue changed your mind? What would prove a leak or a repair more convincingly? Why is closing drinking-water access a poor conservation strategy? How can a school far from the coast affect downstream water?

Optional next step: propose a school water audit with an authorised staff member. Students can plan questions and a recording sheet; staff decide whether and how real readings or inspections are taken.

Scientific context: water availability involves quantity, quality and timing. [1] Meter records can guide investigations and help assess changes in use. [2] The game’s records and control system are fictional.

Sources and reuse
Original fictional scenario, cards and vector artwork. Free educational use and adaptation; not for resale. Supplied logo rights remain unchanged. No photographs or external artwork are reproduced.

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

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

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