

Be water wise!



Learning objectives

At the end of the activity, children will:

- understand that water is a vital resource;
- have analysed how much water is wasted by a dripping tap; and
- have designed and implemented solutions to reduce water wastage at school.

Curriculum Links

Maths, Science, English, Geography, Citizenship, Education for Sustainable Development.

Sustainable Schools Doorway

2 Energy and Water.

Introduction

Analysing water use and wastage at school is a hands-on way to create awareness of the importance of water in everyday life.

A. Preparation

- 1** Ask the class how they use water outside of school e.g. to drink, brush teeth, flush the toilet.
- 2** Divide the class into groups of four and hand out a copy of the pupil worksheet to each group.
- 3** Ask groups to complete the following tasks and record the answers on their worksheet:
 - complete the 'Water use at home' quiz (answers: 1 - 500 litres, 2 - 35 litres, 3 - 50 litres, 4 - 10 litres);
 - think about how pupils, teaching staff, the caterers, caretaker and cleaners use water at school – also consider heating and water usage in the school grounds; and
 - discuss how long they think the school could continue to run without water.
- 4** Bring the class together to report back. Discuss how water is vital in our daily lives and how we take it for granted without thinking about water wastage. For background information visit www.waterintheschool.co.uk

B. The experiment

- 1** Work in the same groups as before. Each group will need a stopwatch, a measuring cylinder, a calculator, and access to a tap.
- 2** Each group should turn on their tap so it drips regularly e.g. two to ten drips per minute. Record the number of drips on the pupil worksheet.
- 3** Ask each group to predict how much water will drip from the tap in five minutes.
- 4** Groups should then place the measuring cylinder under the tap and collect the drips for five minutes, recording the amount of water collected.
- 5** Pupils can use their calculator and worksheet to work out how much water would be wasted if the tap continued to drip over longer periods of time.
- 6** Finish by sharing results and conclude that even a small drip over time can waste large amounts of water.

C. The survey

- 1** As a class, make a list of where taps are located across the school. Allocate an area to each group and send them out to survey all taps in their area. Ask them to note down which taps are dripping and record the number of drips over a minute, using the stopwatch.
- 2** Come back together to share your findings. Use the results of the previous experiment to estimate the total amount of water that is being wasted throughout the school.

D. Make your school drip-proof

- 1** Think about ways your school can save water. For ideas visit www.waterintheschool.co.uk
- 2** Let everyone know what they can do to help reduce water wastage by designing 'anti-drip' posters to be displayed next to taps around school. Ask different groups to produce area specific designs e.g. classroom sinks, kitchen or caretaker/cleaners' area.
- 3** Back these up with an assembly presentation on your findings and explain why we should all save water at school.

Extension ideas

- Liaise with the caretaker to do a 'before' and 'after' water meter reading to see if your poster campaign is effective. Continue to take readings at regular intervals and update/remind everyone about water use and wastage in assemblies, the school's newsletter or website etc.
- Look at other ways to save water e.g. installing water saving devices in toilets or a water butt to collect rainwater.



Be water wise!



Lesson summary

Working in groups you get to investigate how your school uses water, how much of it is wasted and where. You will find out why it is important to save water and design a poster campaign to make your school drip-proof.

Water use at home

Can you match the amounts of water below with their everyday uses in the table?

500 litres 10 litres 35 litres 50 litres

Water Use	Amount used	Were you right?
1 Using a hosepipe for half an hour		Yes / No
2 A five minute shower		Yes / No
3 Washing machine		Yes / No
4 Flushing the toilet		Yes / No

Water use at school

Use the box below to write down how water is used at school:

Did you know?

Did you know that the average person uses 150 litres of water every day?

Tick the amount of time you think your school could stay open without water:

1 minute **1 hour** **A morning or afternoon** **A day** **A week**

Experiment

How many drips did your tap produce in a minute?		
How much water do you think your measuring cylinder will contain after dripping for 5 minutes? (estimate)		ml
How much water did you actually collect after 5 minutes of dripping? (measurement)		ml
If the tap continued to drip for the times given below, how much water would be wasted?		
One hour	Hint – use the calculator to multiply the figure for 5 minutes by 12.	ml
One day	Hint – multiply the figure for 1 hour by 24.	ml
One month	Hint – multiply the figure for 1 day by 30, then convert to litres by dividing the figure by 1,000.	litres
One year	Hint – multiply the figure for 1 month by 12.	litres