

Year 5 – Is Clean Water a Right? Maths Challenge!



- Which of the following uses the most water?
a. 10 toilet flushes ☐ b. 30 minutes using a hose pipe ☐
c. a dripping tap for a week ☐
- The average person in the Thames Water area uses 163 litres of water a day. What is the average use per person in developing countries which don't have a good water supply?
a. 100 litres ☐ b. 50 litres ☐ c. 30 litres ☐
- If we had to fetch and carry our own water for a day, how many 5 litre buckets would we need to carry?
a. 100 buckets ☐ b. 33 buckets ☐ c. 25 buckets ☐
- How many 5 litre buckets would someone in a developing country need to carry for their daily use?
a. 6 buckets ☐ b. 10 buckets ☐ c. 15 buckets ☐
- A dripping tap wastes 63 litres of water a week. How much water is wasted for the 5 days you are at school?
a. 45 litres ☐ b. 75 litres ☐ c. 100 litres ☐
- If a tap is left full on for a day it will waste 8,640 litres of water. How many days' water is that for someone in the UK?
a. 10 days ☐ b. 53 days ☐ c. 30 days ☐
- How many days water is that for someone in a developing country?
a. 288 days ☐ b. 175 days ☐ c. 200 days ☐
- A urinal flush uses 9 litres of water every 20 minutes. In the 6 hours you are at school that is 162 litres of water. How much water could be saved in those 6 hours if it flushed every 30 minutes instead?
a. 20 litres ☐ b. 45 litres ☐ c. 54 litres ☐
- How much water would this save in the 30 hours you are at school each week?
a. 200 litres ☐ b. 270 litres ☐ c. 300 litres ☐
- If a bath holds 80 litres of water, how much water would you save by having a 5 minute shower instead? The shower uses 7 litres of water per minute.
a. 45 litres ☐ b. 20 litres ☐ c. 100 litres ☐

Facts

Flushing the toilet	7 litres	1.4 buckets*
Bath	80 litres	16 buckets
5 minute shower (not power shower)	40 litres	8 buckets
Brushing teeth with tap running	6 litres/ min	1.2 buckets
Brushing teeth with tap off	1 litre	0.2 buckets
Dripping tap	63 litres/ week	12.6 buckets
Washing machine	65 litres	13 buckets
Dishwasher	20 litres	4 buckets
Washing car with bucket	10 litres	2 buckets
Hosepipe/ sprinkler	540 litres/ hour	108 buckets

* Figures based on bucket with 5 litres capacity

How much do you use?

The water we have is always on the move in a never-ending cycle. We need to take care of what we already have because every living thing needs water to survive.

Let's see how much water your family uses around the home and garden in the course of a week.

Write the correct number in the following questionnaire, for a day, then a week. By doing this you will find how much water you use and think about ways that you can conserve our dwindling water supplies and use water wisely.

Example: There are 4 people in your family

Question	Answer per day	Answer per week	Average litres per activity	Litres my family uses per week
How many baths does your family take in a day/week?	4	$4 \times 7 = 28$	An average bath uses 80 litres of water	$28 \times 80 \text{ litres} = 2240 \text{ litres per week}$

How many people live in your home? _____. Remember to include all the members of your family.

Question	Answer per day	Answer per week	Average litres per activity	Litres my family uses per week
1. How many baths does your family take in a day/week?			80 litres per bath	
2. How many showers does your family take in a day/week?			35 litres per shower	
3. How many times is your toilet flushed in a day/week?			7 litres per flush	
4. In total how many times a day/week do all your family clean their teeth? a) With a tap running b) Without a tap running			6 litres per minute 1 litre	
5. How often is your kettle filled in a day/week?			1.5 litres per kettle	
6. How often in a day/week does your family fill a glass/cup with water from the tap?			0.25 litres per cup/glass	
7. How often in a day/week is your washing-up bowl in the sink filled with water?			5 litres per bowl	
8. How often is your dishwasher used in a day/week?			20 litres per load	
9. How often is your washing machine used in a day/week?			65 litres per load	
10. How often is your garden watered in a day/week? a) With a watering can filled from the tap? b) With a watering can filled from the butt?			4 litres per full can 0	
11. How often are the cars/caravans washed in a day/week? a) Using a bucket of water from the tap? b) Using a bucket of water from the butt?			5 litres per bucket 0	
Total				

Leaky Taps Problems

Some taps leak. This wastes water. If you see a tap leaking an adult should be told so that the leak can be fixed and the tap can work properly again. Read the questions below carefully. Some may require two (or more) steps/operations before you reach your answer.

- 1.** A dripping tap can waste 9 litres of water per day.

If there were 6 dripping taps in your school, how much water would be wasted in one school week? (5 days)



- 2.** A 3mm stream of water from the tap wastes 919 litres per day.

The average person in the UK uses 163 litres a day. How many people could have used this wasted water? (Round to the nearest whole number).



- 3.** A tap left running wastes 8,640 litres of water a day.

- a. How much water is wasted per hour?
b. How much water is wasted in a whole week? (7 days)

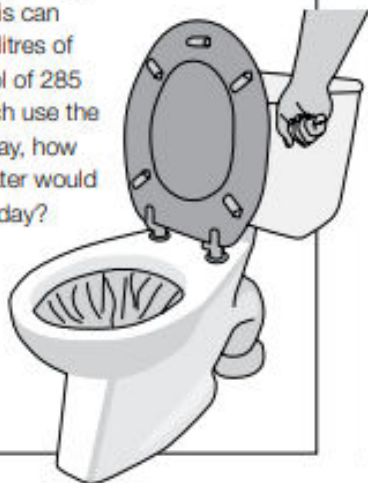


- 4.** A 5mm stream of water from a tap wastes 1,440 litres of water per day.

To stop this problem, push taps could be fitted. If 4 taps were left like this over 5 days, how much water could have been saved if push taps were fitted?



- 5.** Every time you flush the toilet in school it uses 7 litres of water. By fitting a save-a-flush this can be reduced to 6 litres of water. In a school of 285 children who each use the toilet 4 times a day, how many litres of water would be saved in one day?



- 6.** 70% of the water used for washing hands could be saved if spray taps were fitted in the children's toilets.

If 3420 litres of water was used for hand washing in a day, how much water would be saved by fitting spray taps?

