

Who is being most WaterWise?

Focus

In this activity students have the opportunity to apply their mathematical skills to manipulate, analyse and compare data sets to aid their interpretation of a problem – Which is the most WaterWise family?

It is suggested that the class work in groups of 3-4, with 2-3 groups working with data from the Brown family and 2-3 groups working with data from the Jones family.

Being WaterWise means:

1. having water efficient appliances in the home
2. maintaining taps and appliances (checking for leaks etc)
3. behaving in a water conscious manner

The Brown Family

Suppose your family has 4 members; and in your house there are the following appliances.

- top loading washing machine (21L/p/d)
- AAA dishwasher (5L/p/d)
- dual flush toilet (3 L/flush)
- AAA shower rose (9L/min)

From the rate notice it works out that this family is using 150L/p/d.

The Jones Family

Suppose your family has 4 members; and in your house there are the following appliances

- front loading washing machine (10 L/p/d)
- old style dishwasher (20L/p/d)
- single flush toilet (12L/flush)
- conventional shower rose (20 L/min)

From the rate notice it works out that this family is using 300 L/p/d.

Q If a bucket contains 10L, how many buckets of water does each person in this family use every day?

Procedure:

- Assuming level 5 water restrictions apply, account for the daily use of water. Keep a diary.
- Calculate water use for the family and insert these calculations into Table 1.

TABLE 1:

I use water for....	How many litres every day? (L/p/d)	
	Minimum - Maximum	Each person in family
Drinking	2L-3L	
Showering (10 min)	90L-200L	
Toilet flushing (x6)	18L-72L	
Washing clothes	10L-21L	
Cooking and washing up	5L-20L	
Cleaning house and car	5L	
Watering garden and lawn	NOT under Level 5 restrictions	
TOTAL	130L/p/d – 320L/p/d	L/p/d*

*Q. How many buckets is this?

- Compare this calculation with the rate notice figure. Does it match? If not, how could you explain the difference? How else might the family have used the water?
- Make a list of possible uses of any extra water.

- Decide which activity is most likely to have used the extra water and allocate how many litres you think were used in each activity by the family. Put amounts into the first column in Table 2.

TABLE 2:

I use water for....	How many litres every day?	
	Explaining the difference	New allocation for each person
Drinking		
Showering (? min)		
Toilet flushing (x ?)		
Washing clothes		
Cooking and washing up		
Cleaning house and car		
Watering garden and lawn	NOT under Level 5 restrictions	
TOTAL (as on rate notice)		_____ L/p/d

More thinking:

- Q What was the average time in the shower?
- Q Suppose everyone in the family only showered for 8 minutes, why else might the meter reading show a higher water use?
- Q What changes to appliances can be made in this family's home to make it a more WaterWise home?
- Q Where can this family save water? Decide Yes or No. Work out how water should be used by the family and record the usage (litres per person per day) in Table 3.
- Discuss as a class why it is important to save water.
- Suggest some changes your family could make in the way they use water.
- Write down three ways you could save water.

FOR LEVEL 4 CLASSES:

- Q How much can be reasonably saved? (in litres or buckets). Work out and record in Table 3.

TABLE 3:

I could use less water for...	Yes/No	Litres for each person each day	Buckets for each person each day
Drinking			
Showering (_____ min)			
Toilet flushing (x _____)			
Washing clothes			
Cooking and washing up			
Cleaning house and car			
Watering garden and lawn			
TOTAL		_____ L/p/d	_____ B/p/d
SAVINGS		_____ L/p/d	_____ B/p/d

- Compare the group findings with another group doing the same task, checking results and sharing ideas.
- Then combine as a class to compare the two families.