

The Big Drip

You need: a calculator, a photocopy of the house plan copymaster

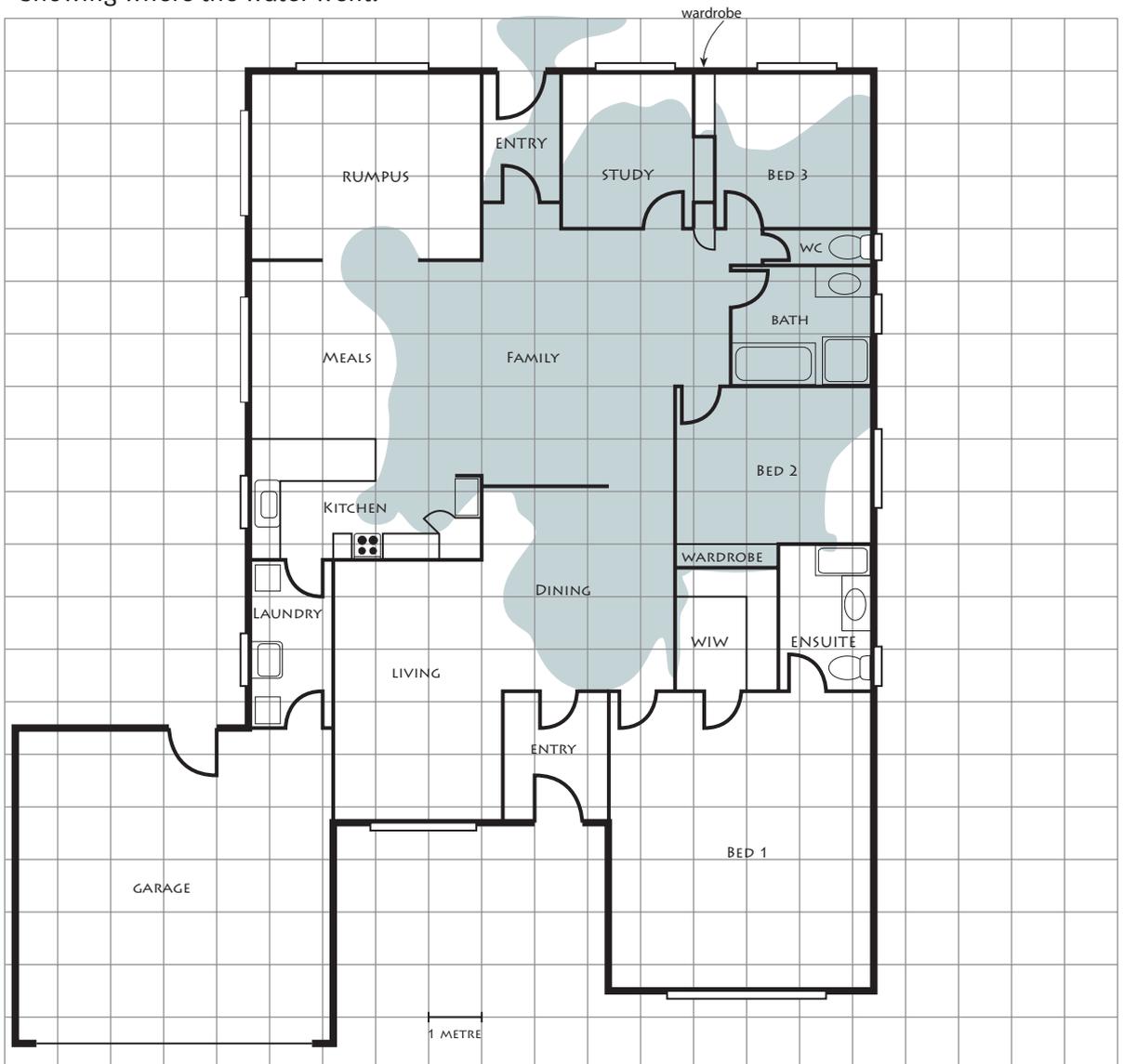
ACTIVITY ONE

William arrived late for class one Monday morning.

Sorry, Miss. We went away for the weekend, and someone left the handbasin tap running, with the plug in. When we got back last night, we had this huge mess to clean up.



Here is a plan of William's house, showing where the water went:



1. Estimate the total area of William's house, excluding the garage.
2. Estimate the area that was flooded. Show your working.
3.
 - a. Using your answers to questions 1 and 2, what percentage of the house was flooded?
 - b. What, approximately, was the ratio of the flooded area to the non-flooded area?

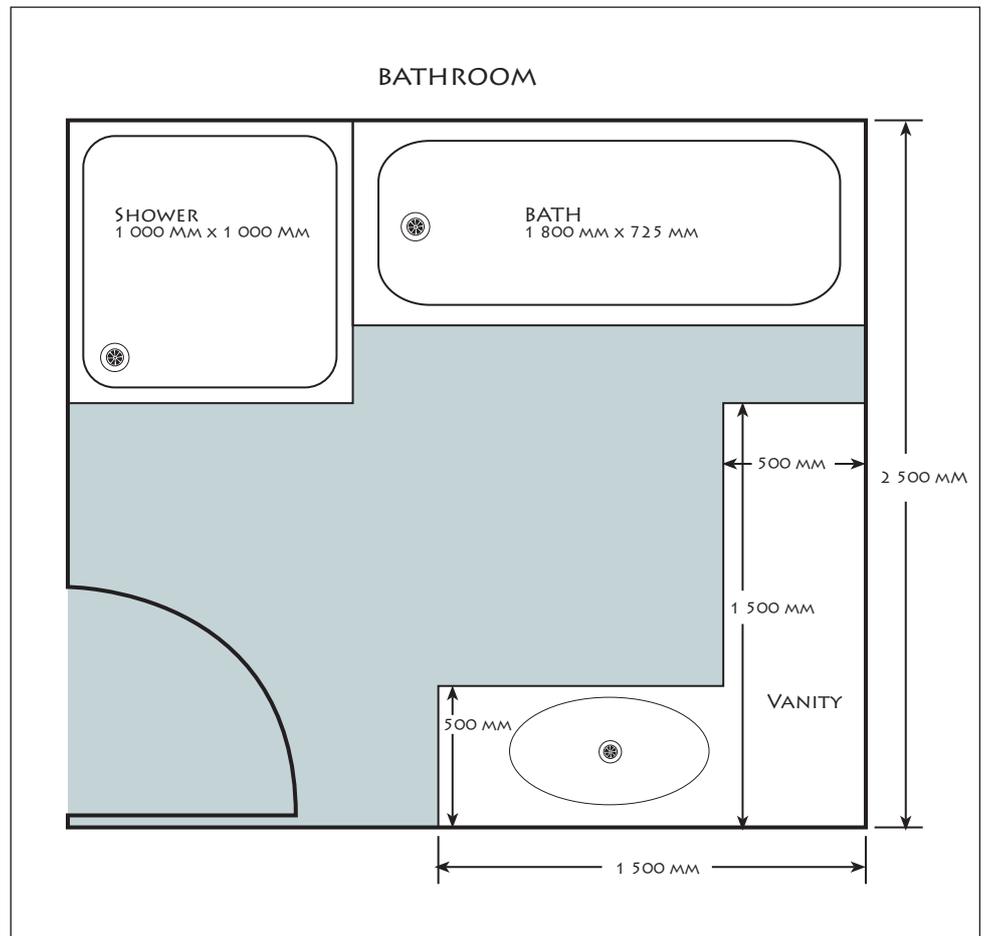
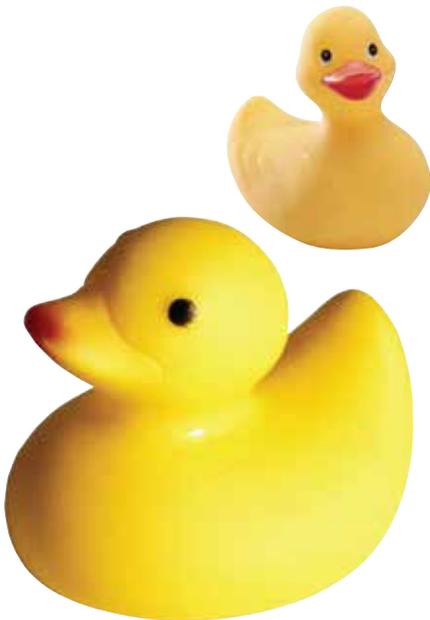
ACTIVITY TWO

William's friend Finn had a crazy thought.



Imagine if our bathroom were completely sealed and the tap left on. I wonder how long it would take for it to fill to the top!

Here is a floor plan of Finn's bathroom. The ceiling is 2.4 metres high.



1. a. What is the area of the bathroom?
b. What is the volume of Finn's bathroom in cubic metres?
2. If Finn's tap were flowing at 200 litres every 10 minutes, how long would it take to completely fill his sealed bathroom? (Note: $1 \text{ m}^3 = 1\,000 \text{ L}$.)
3. After the flood, the vinyl would need replacing. What is its area?
4. Work out how long it would take to fill up your bathroom at home. Draw a floor plan of the room and write down any estimates or calculations you have made.