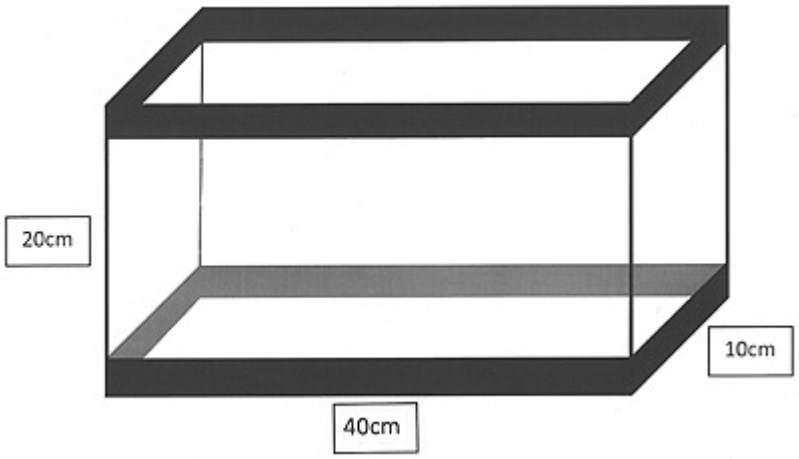
The fish aquarium

Annotation

Aleisha understands the metric units of measure and the mathematical relationship between them. She knows that 1 litre of water has a weight/mass of 1 kilogram and a volume of 1000 cubic centimetres. She uses this knowledge to solve problems and is able to clearly explain the connections between the units as she uses them.

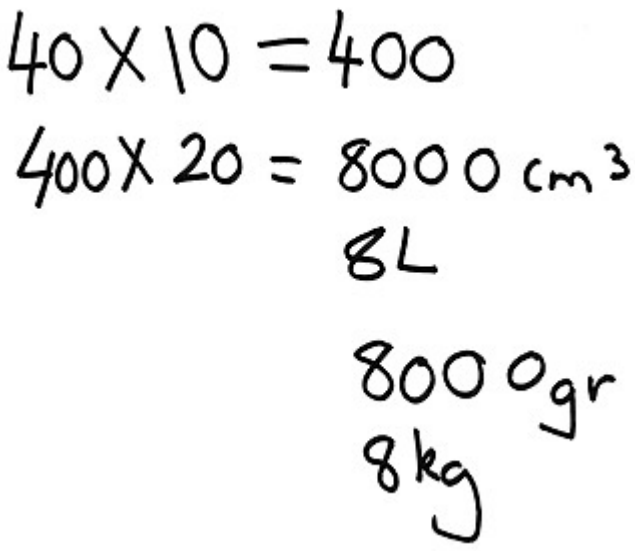
Problem: The fish aquarium

The teacher places a diagram of an aquarium with its dimensions in front of the student. Then the teacher asks the student how many litres of water the aquarium would hold if it were filled to the top and the weight of this amount of water.



Student Response

Aleisha calculates the volume of the aquarium and converts between measurement units.



Teacher: Please explain your working.

Aleisha: I multiplied the length of all the sides together, so that's 40 x 10, which is 400. And then 400 x 20 is 8000 – that's cubic centimetres because the sides are all in centimetres.

Teacher: Tell me about the 8 litres and the 8 kilograms.

Aleisha: Well 1 cubic centimetre is the same as 1 millilitre, and 1 millilitre weighs 1 gram. So 8000 cubic centimetres is 8000 millilitres, which is 8000 grams. Another way to think about it is that 1 litre of water weighs 1 kilogram, so 8 litres weighs 8 kilograms.