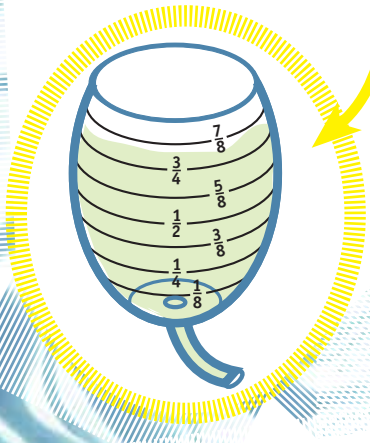
Bottle Ups

You need
- ☑ 1-litre bottles
- ☑ water
- ☑ scissors
- ☑ a measuring jug
- ☑ a marker pen
- ☑ a classmate

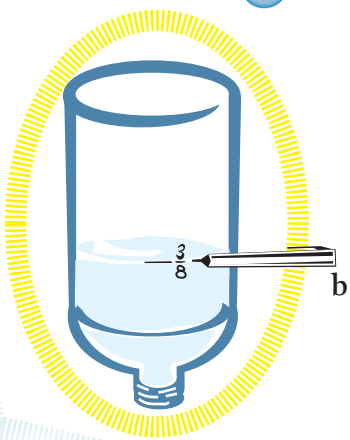
Activity One



This is the fuel tank on Hinemoa's microlite aircraft.
It holds exactly 1 litre of fuel when it is full.
The marks show Hinemoa how much fuel she has left.

1. a. With a classmate, make a model of a fuel tank by cutting the base off one of the 1 litre bottles. Make sure the top is screwed on tightly.

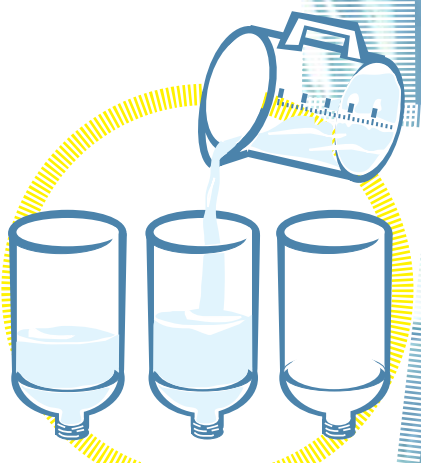
   b. Measure out 1 litre of water into the measuring jug and tip this into the upturned bottle. Mark the bottle to show exactly 1 litre. Empty out the water.



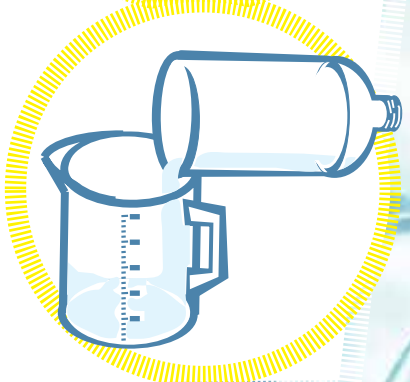
2. a. Discuss with your classmate how you could work out where to mark the $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$ levels on the bottle.

   b. Follow the method you have decided on and mark the levels with a marker pen.

3. Now you need to add the $\frac{1}{3}$ and $\frac{2}{3}$ marks to your model fuel tank. Measure 1 litre of water with the measuring jug. Pour this water between three 1-litre bottles to find these marks. (Do not use the measuring jug for this part of the measuring.)



4. Predict how much water, in millilitres, will be in the bottle when it is one-third and two-thirds full. Use the measuring jug to check your predictions.



Activity Two

Each of these bottles holds 1 litre of water.

Draw the bottles in your book and mark where the water level might be if each bottle contained:

a. 500 millilitres **b.** 750 millilitres

c. 0.333 litres.