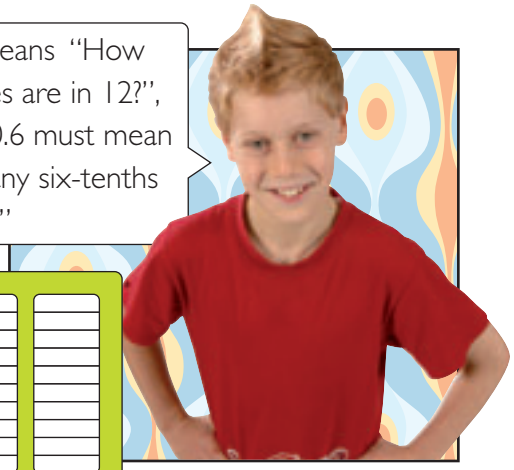
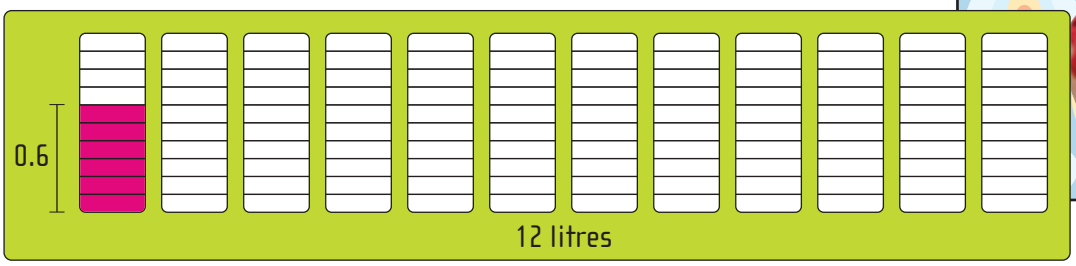
The Power of 10

You need ☑ 12 litres diagram (see copymaster)

Activity

Bradley needs to get 12 litres of fruit drink for a party. Each bottle holds 600 millilitres or 0.6 of a litre. How many bottles should he buy?

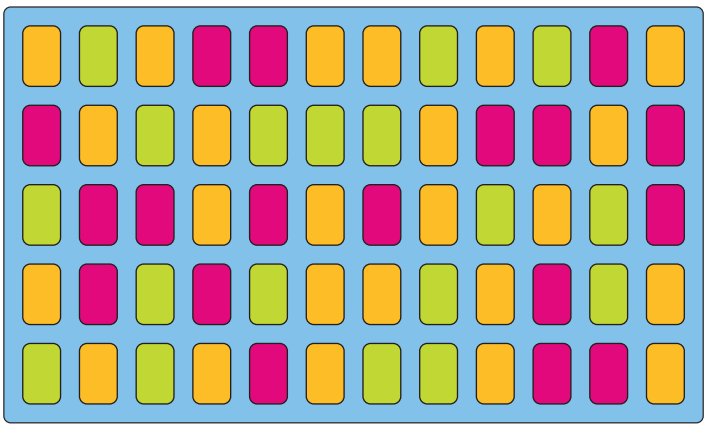


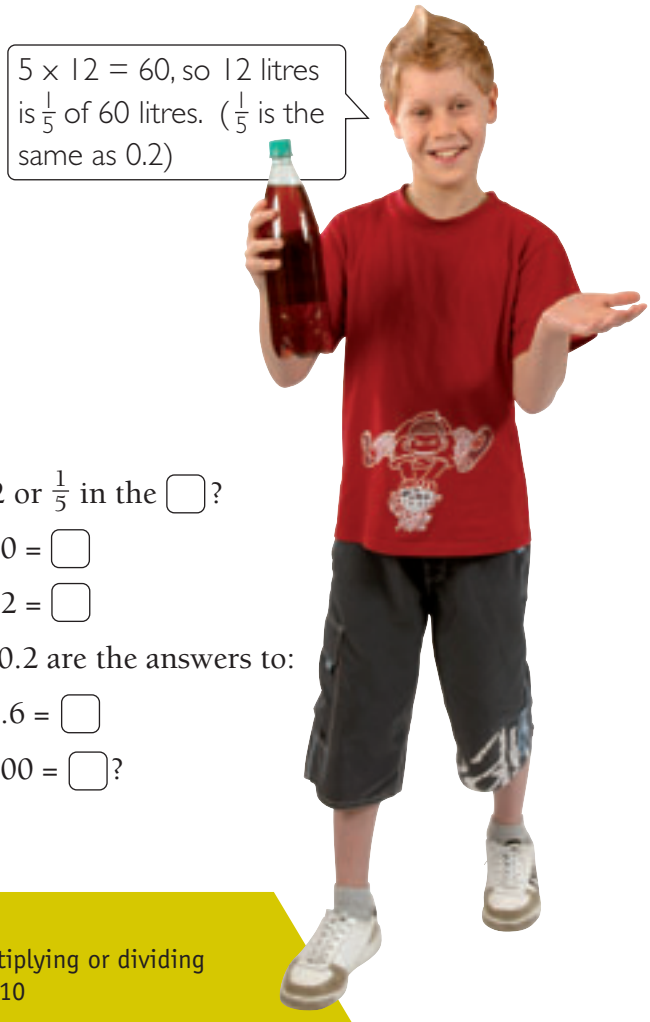


1. a. Use your copy of the diagram above to help you calculate 12 ÷ 0.6 = ☐.

   b. How is your answer different from the answer to 12 ÷ 6 = ☐?

2. Bradley buys the fruit drink. The shopkeeper tells him that she has now sold 60 litres of fruit drink so far today. Bradley wonders what fraction of 60 litres his 12 litres is.





   a. Which of these equations would give 0.2 or $\frac{1}{5}$ in the ☐?

   i. $\frac{1}{5}$ of 60 = ☐ ii. 12 ÷ 60 = ☐

   iii. 60 x ☐ = 12 iv. 60 ÷ 12 = ☐

   b. How many times bigger or smaller than 0.2 are the answers to:

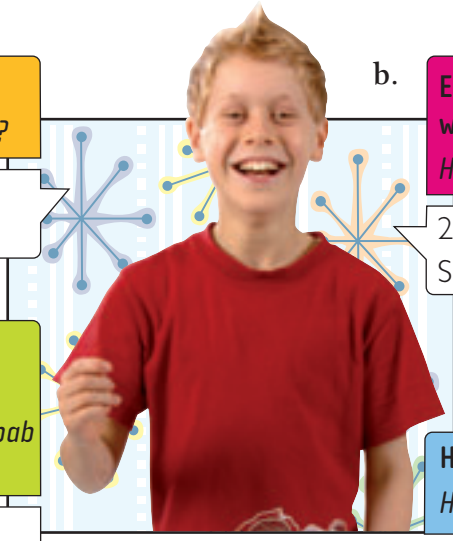
   i. 12 ÷ 6 = ☐ ii. 12 ÷ 0.6 = ☐

   iii. 12 ÷ 0.06 = ☐ iv. 12 ÷ 600 = ☐?

   Explain your answers.

Investigating the result of multiplying or dividing the divisor by 10

3. Bradley has some other items on his list. Use his thinking to help you work out the answers for each item.



a. **Each balloon costs 30 cents.**
How many balloons for $18.00?

18 ÷ 3 = 6.
So what is 18 ÷ 0.30?

b. **Each packet of cheerios weighs 400 grams.**
How many packets in 2 kilograms?

20 ÷ 4 = 5.
So what is 2 ÷ 0.4?

c. **Each bamboo kebab stick is 28 centimetres long.**
Laid end to end, how many kebab sticks would make 7 metres?

7 x 100 = 700.
700 ÷ 28 = 100 ÷ 4.
So what is 7 ÷ 0.28?

d. **Ham costs $15 per kilogram.**
How much ham will $6 buy?

60 ÷ 15 = 4.
So what is 6 ÷ 15?

4. At the party, Bradley and three of his friends are talking about division.

When you share things, it's like dividing. For example, 15 ÷ 3 = 5 means 15 apples shared among 3 people: each person gets 5 apples.

But dividing can also mean "How many lots of something?" 15 ÷ 3 = 5 can mean "How many lots of 3 are in 15?"

5 is smaller than 15, but I don't think the answer to a division problem is always smaller than the starting number.

a. Write three division problems in which the answer is bigger than the starting number.

b. Write three division problems in which the answer is equal to the starting number.

5. Nikhil knows that 32 ÷ 8 = 4. What would he do to work out:

a. 32 ÷ 0.8 = ☐ **b.** 32 ÷ 80 = ☐ **c.** 32 ÷ 800 = ☐

d. 32 ÷ 0.08 = ☐ **e.** 3.2 ÷ 8 = ☐ **f.** 3.2 ÷ 80 = ☐?