As outcomes, Year 5 pupils should, for example:	As outcomes, Year 6 pupils should, for example:

Relate fractions to division. For example:
- understand that finding one third is equivalent to dividing by 3, so $\frac{1}{3}$ of 15 is equivalent to $15 \div 3$;
- when 3 whole cakes are divided equally into 4, each person gets three quarters, or $3 \div 4 = \frac{3}{4}$;
- recognise that $\frac{12}{3}$ is another way of writing $12 \div 3$.

Relate fractions to division. For example:
- understand that finding one tenth is equivalent to dividing by 10, so $\frac{1}{10}$ of 95 is equivalent to $95 \div 10$;
- when 9 whole cakes are divided equally into 4, each person gets nine quarters, or $9 \div 4 = 2\frac{1}{4}$;
- recognise that $60 \div 8$ is another way of writing $\frac{60}{8}$, which is the same as $7\frac{4}{8}$.

Answer questions such as:
- How many halves in: $1\frac{1}{2}$, $3\frac{1}{2}$, $9\frac{1}{2}$…?
- How many quarters in: $1\frac{1}{4}$, $2\frac{3}{4}$, $5\frac{1}{2}$…?
- How many thirds in: $1\frac{1}{3}$, $3\frac{2}{3}$, $7\frac{1}{3}$…?

See also remainders (page 57).

See also remainders (page 57).

Find fractions of numbers and quantities.
For example, answer questions such as:

- What is one tenth of: 80, 240, 1000…?
  What is one hundredth of: 100, 800, 1000…?

- What is $\frac{3}{10}$ of: 50, 20, 100…?
  What is $\frac{3}{4}$ of: 16, 40, 100…?

- Write $\frac{23}{100}$ of £1 in pence.
  Write $\frac{7}{10}$ of 1 metre in centimetres.

Find fractions of numbers and quantities.
For example, answer questions such as:

- What is three tenths of: 80, 10, 100…?
  What is seven tenths of: 50, 20, 200…?
  What is nine hundredths of: 100, 400, 1000…?

- What is $\frac{4}{5}$ of: 50, 35, 100…? 2 litres, 5 metres…?
  What is $\frac{5}{6}$ of: 12, 48, 300…? 12 km, 30 kg?

- Write $\frac{3}{10}$ of 2 metres in centimetres.
  Write $\frac{23}{100}$ of 4 kilograms in grams.
  Write $\frac{7}{1000}$ of 1 metre in millimetres.

- What fraction of £1 is 33p? 30p?
  What fraction of 1 metre is 27 cm? 20 cm?

- What fraction of 1 km is 250 m? 200 m?
  What fraction of 1 kg is 500 g? 300 g?
  What fraction of 1 litre is 750 ml? 700 ml?
  What fraction of 1 day is 1 hour, 8 hours, 12 hours?

- I work for 8 hours and sleep for 10 hours.
  What fraction of the day do I work?
  What fraction of the day do I sleep?

- What fraction of the smaller shape is the larger?

- What fraction of £1 is 35p? 170p?
  What fraction of 1 metre is 140 cm?

- What fraction of 1 km is 253 m?
  What fraction of 1 kg is 397 g?
  What fraction of 1 litre is 413 ml?

- What fraction of one year is:
  one week;   one day;   June?

Relate fractions to simple proportions.

See ratio and proportion (page 27).

Use, read and write, spelling correctly, vocabulary to express simple ratios and proportions:
for every… to every… in every… as many as…

Discuss statements such as:

• John has 1 stamp for every 2 that Mark has.

  This means that:
  John has half as many stamps as Mark.
  Mark has twice as many stamps as John.
  John has one third of the total number of stamps and Mark has two thirds.
  If John has 4 stamps, Mark has 8 stamps.
  If Mark has 20 stamps, John has 10 stamps.

Solve simple problems involving 'in every' or 'for every'. For example:

• Chicken must be cooked 50 minutes for every kg.
  How long does it take to cook a 3 kg chicken?
• At the gym club there are 2 boys for every 3 girls.
  There are 15 girls at the club.
  How many boys are there?
  There are 12 boys at the club.
  How many girls are there?
• Zara uses 3 tomatoes for every ½ litre of sauce.
  How much sauce can she make from 15 tomatoes?
  How many tomatoes does she need for 1 litre of sauce?
• A mother seal is fed 5 fish for every 2 fish for its baby.
  Alice fed the mother seal 15 fish.
  How many fish did its baby get?
  Alice fed the baby seal 8 fish.
  How many fish did its mother get?
• For every 50p coin Mum gives to Dad, he gives her five 10p coins.
  Dad gave Mum twenty-five 10p coins.
  How many 50p coins did Mum give him?

See also problems involving 'real life' (page 83), money (page 85) and measures (page 87).

Appreciate that 'two to every three' compares part to part; it is equivalent to 'two in every five', which compares a part to the whole.

For example:

• Here is a tile pattern.

  How many black tiles to white tiles? (1 to every 2)
  What is the proportion of black tiles in the whole line? ($\frac{1}{3}$)

• Compare shapes using statements such as:

  there is one small square in the small shape for every two small squares in the larger shape;
  the larger shape is twice the size of the smaller shape;
  the smaller shape is half the size of the larger shape.

  Respond to questions such as:

  How many white to shaded squares? (1 to every 2)
  What proportion (fraction) of the total number of squares is shaded? ($\frac{6}{9}$ or $\frac{2}{3}$)
  What fraction of the big shape is the small one? ($\frac{1}{2}$)

Solve simple ratio and proportion problems in context. For example:

• Kate shares out 12 sweets.
  She gives Jim 1 sweet for every 3 sweets she takes.
  How many sweets does Jim get?
• At the gym club there are 2 boys for every 3 girls.
  There are 30 children at the club.
  How many boys are there?
• Dee mixes 1 tin of red paint with 2 tins of white.
  She needs 9 tins of paint altogether.
  How many tins of red paint does she need?
• There are 5 toffees to every 2 chocolates in a box of 28 sweets.
  How many chocolates are there in the box?

See also problems involving 'real life' (page 83), money (page 85) and measures (page 87).