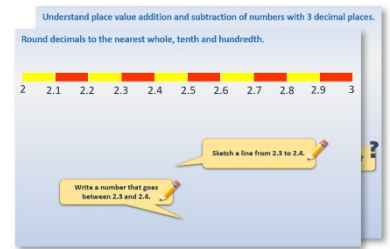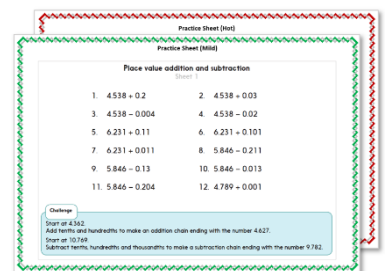# Week 12, Day 2
Find percentages of amounts

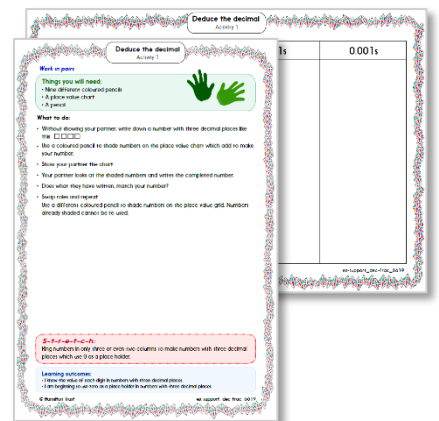**Each day covers one maths topic. It should take you about 1 hour or just a little more.**

1. Start by reading through the **Learning Reminders**.
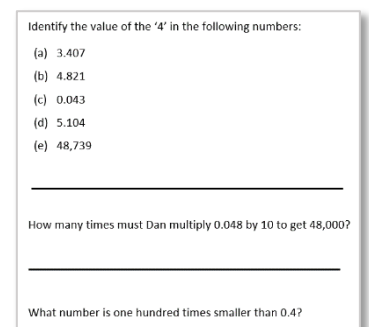They come from our *PowerPoint* slides.

2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either Mild (easier) or
Hot (harder)!
Check the answers.

3. Finding it tricky? That's OK… have a go with a
grown-up at **A Bit Stuck?**

4. Have I mastered the topic? A few questions to
Check your understanding.
Fold the page to hide the answers!

Learning Reminders

Find fractions and percentages of numbers and measures including money.

Find 10%, 1% and 50% of £248.

How did you work these out?

10% of £248
$^1/_{10}$ of £248 is £24.80

1% of £248
$^1/_{100}$ of £248 is £2.48

50% of £248
$^1/_2$ of £248 is £124

Now quickly think of and list other percentages you could find now that you know these percentages.

e.g. 5%, 25%, 75%, 90%, 19%, 21% ...

Key percentages are very useful to find other percentages.

Learning Reminders

Find fractions and percentages of numbers and measures including money.

Would you prefer 10% of £180 or 20% of £200? **?**

10% of £180 is £18
20% of £200 is £40
so 20% of £200 > 10% of £180

Would you prefer to be stung by 10% of 200 bees or 15% of 100 bees?! **?**

10% of 200 is 20
15% of 100 is 15
so 15% of 100 < 10% of 200

Would you prefer to eat 50% of a 500g pizza or 25% of an 800g pizza? **?**

50% of 500g is 250g
25% of 800g is 200g
so 50% of 500g > 25% of 800g

Today's tip is <u>use the equivalence with fractions</u> to find percentages of amounts.
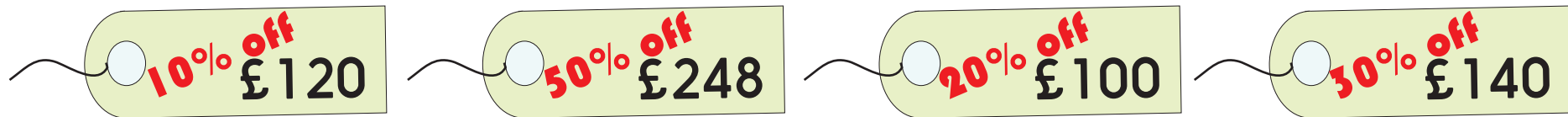
Finding fractions and percentages

1. Find 10% of £25, 340m, 46kg and 75cm.

2. Find 10%, then 5% and then 15% of 300, 240, 160 and 140.

3. Find 50%, then 25% of 480km, £26, 6.8 litres and 14kg.

4. Find the new prices in the summer sales.

10% off £120

50% off £240

20% off £100

20% off £200

Practice Sheet Hot
Finding fractions and percentages

1. Find 10% of £75, 460g, 58m, 36cm

2. Find 15% of 600, 90, 360, 248

3. Find 25% of 580km, £26, 2.8 litres and 14kg.

4. Find the new prices in the summer sales.

10% off £120   **50% off £248**   **20% off £100**   **30% off £140**

5. What is £7.50 as percentage of £10?

£10 is 100%	
£7.50 is ___%	

6. What is £4 as a percentage of £5?

£5	
£4 is ___%	

7. What fraction of 2kg is 250g?

2kg	

8. A shop has offers on two sizes of packets of biscuits. Which is the best value?

£1 McHamilton's **Rich Tea Biscuits** 500g
20% off the normal price

75p McHamilton's **Digestive Biscuits** 400g + 25% Extra free

Practice Sheets Answers

Finding fractions and percentages (mild)

1. Find 10% of:
    £25 = £2.50   340m = 34m   46kg = 4.6kg   75cm = 7.5cm

2. 10% of 300 = 30   5% of 300 = 15   15% of 300 = 45
    10% of 240 = 24   5% of 240 = 12   15% of 240 = 36
    10% of 160 = 16   5% of 160 = 8   15% of 160 = 24
    10% of 140 = 14   5% of 140 = 7   15% of 140 = 21

3. 50% of 480km = 240km   25% of 480km = 120km
    50% of £26 = £13   25% of £26 = £6.50
    50% of 6.8 litres = 3.4 litres   25% of 6.8 litres = 1.7 litres
    50% of 14kg = 7kg   25% of 14kg = 3.5kg

4. £120 –10% = £108   £240 – 50% = £120
    £100 – 20% = £80   £200 – 20% = £160

Finding fractions and percentages (hot)

1. 10% of:
    £25 = £7.50   460g = 46g   58m = 5.8m   36cm = 3.6cm

2. 15% of:
    600 is 90   90 = 13.5   360 = 54   248 = 37.2

3. 25% of:
    580km = 145km   £26 = £6.50   2.8 litres = 0.7 litres   14kg = 3.5kg

4. 10% off £120 = £108
    50% off £248 = £124
    20% off £100 = £80
    30% off £140 = £98

5. What is £7.50 as percentage of £10?   75%

6. What is £4 as a percentage of £5?   80%

7. What fraction of 2kg is 250g? $\frac{1}{8}$

8. A shop has offers on two sizes of packets of biscuits.
    Which is the best value?
    Digestive biscuits are the best value.
    Rich tea biscuits: 20% off £1 = 80p for 500g
    Digestive biscuits 400g + 25% extra = 75p for 500g

Explore more Hamilton Trust Learning Materials at https://wrht.org.uk/hamilton
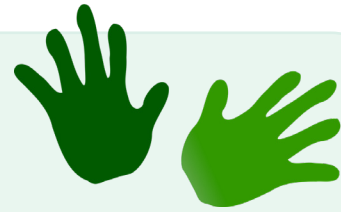
Work in pairs

Things you will need:
• Your four 100 grids with key equivalent percentages
  and fractions from the whole group activity
• A pencil

What to do:

• Write the four KEY equivalent percentages
  and fractions:

1% =

10% =

25% =

50% =

1% of 400 is
10% of 400 is
25% of 400 is
50% of 400 is

1% of 800 is
10% of 800 is
25% of 800 is
50% of 800 is

1% of 500 is
10% of 500 is
25% of 500 is
50% of 500 is

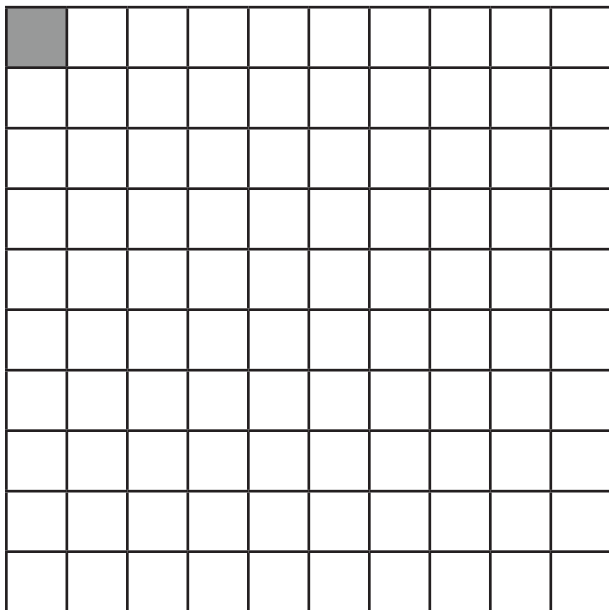| |
|---|
| 1% of 600 is |
| 10% of 600 is |
| 25% of 600 is |
| 50% of 600 is |

S-t-r-e-t-c-h:
Find 11% and 75% of 400. Can you find any other percentages using
the four key equivalent fractions of $\frac{1}{100}$, $\frac{1}{10}$, $\frac{1}{2}$ and $\frac{1}{4}$?
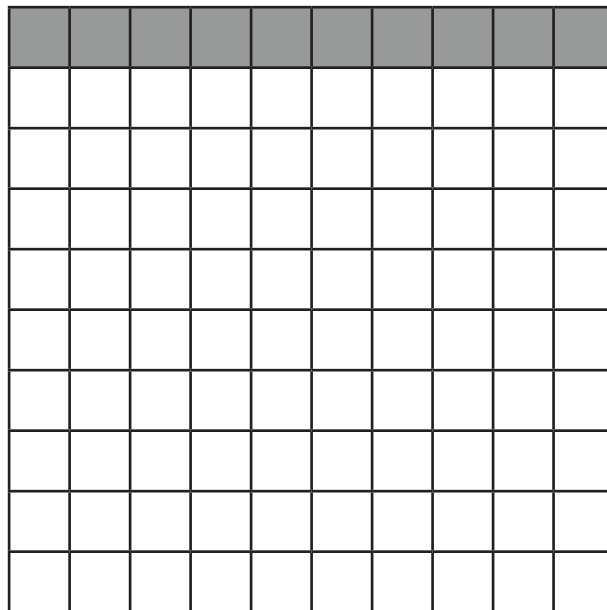
Learning outcomes:
• I can use equivalent percentages and fractions to find 1%, 10%, 25% and 50% of amounts.
• I am beginning to use these key equivalent percentages and fractions to find other percentages
  of amounts.

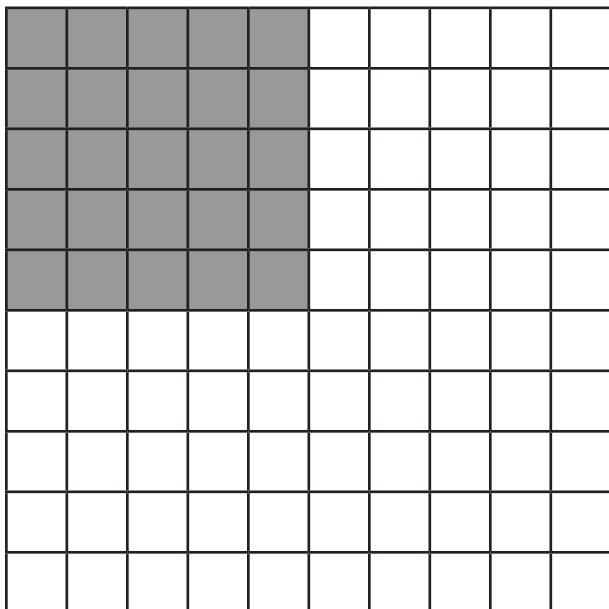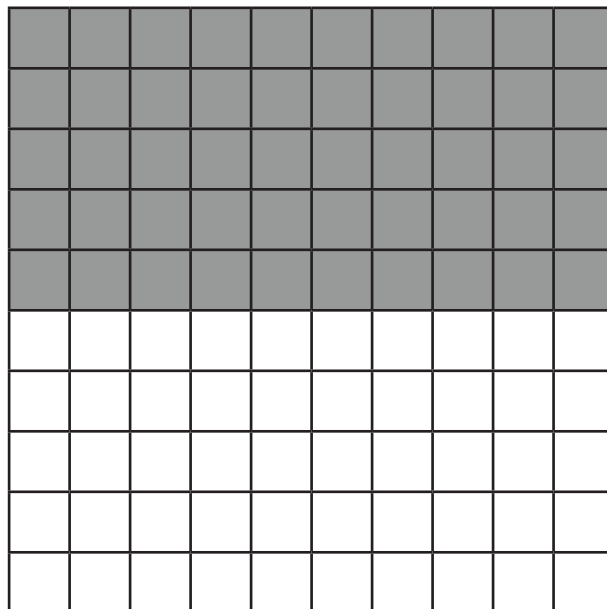$1\% = \frac{1}{100}$

$10\% = \frac{10}{100} = \frac{1}{10}$

$25\% = \frac{25}{100} = \frac{1}{4}$

$50\% = \frac{50}{100} = \frac{5}{10} = \frac{1}{2}$

Check your understanding
Questions

Find 10% of these prices. Use that to find 20% and 30%.

     (a)   £14.20

     (b)   £1.50

     (c)   £99

Which is longer, 25% of 200m or 15% of 300m?
Which is heavier, 30% of 600g or 20% of 800g?

Fold here to hide answers.

Check your understanding
Answers

Find 10% of these prices. Use that to find 20%.

     (a)   £14.20   10% is £1.42, 20% is £2.84, 30% is £4.26

     (b)   £1.50   10% is £0.15 or 15p, 20% is £0.30 or 30p, 30% is £0.45 or 45p.

     (c)   £99   10% is £9.90, 20% is £19.80, 30% is £29.70

     Divide by 10 to find 10%.
     Double 10% to find 20%.
     Add 10% and 20% to find 30%.

Which is longer, 25% of 200m or 15% of 300m?
25% of 200m, as 25% of 200m is 50m and 15% of 300m is 45m.

Which is heavier, 30% of 600g or 20% of 800g?
30% of 600g, as 30% of 600g is 180g and 20% of 800g is 160g.