Acorn & Ink

Percentages made easy

Per cent means “out of 100”. 18% = 18 out of every 100 = $\frac{18}{100}$.

The building blocks

100% the whole

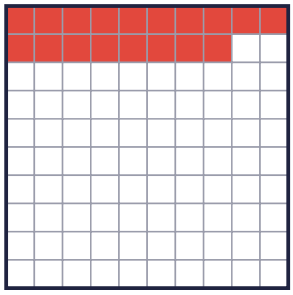
50% divide by 2 (half)

25% divide by 4 (a quarter)

10% divide by 10

5% half of 10%

1% divide by 100



18 squares out of 100 = 18%

1. Build it from blocks

35% of 240
= 10% + 10% + 10% + 5%
= 24 + 24 + 24 + 12 = **84**

2. Use a fraction

75% of 36 = $\frac{3}{4}$ of 36
36 ÷ 4 = 9
9 × 3 = **27**

3. Multiply, then ÷ 100

18% of 18
18 × 18 = 324
324 ÷ 100 = **3.24**

The swap trick

A% of B = B% of A.
8% of 25 = 25% of 8 = **2**

Ages 11+

Increase/decrease: work out the %, then add it or take it away.
As a %: part ÷ whole × 100.
% change: difference ÷ start × 100.

Fractions, decimals and percentages

$\frac{1}{2}$ = 0.5 = **50%** $\frac{1}{4}$ = 0.25 = **25%** $\frac{3}{4}$ = 0.75 = **75%** $\frac{1}{5}$ = 0.2 = **20%**

$\frac{1}{10}$ = 0.1 = **10%** $\frac{1}{100}$ = 0.01 = **1%**

PERCENTAGES · AGES 10–11

Percentages of amounts

Acorn & Ink

Work these out without a calculator. Use the building blocks.

Name _____ Date _____ Score _____ / 16

1. 50% of 100 = _____
2. 30% of 460 = _____
3. 1% of 400 = _____
4. 50% of 348 = _____
5. 15% of 240 = _____
6. 60% of 155 = _____
7. 10% of 300 = _____
8. 40% of 450 = _____
9. 75% of 84 = _____
10. 15% of 480 = _____
11. 25% of 456 = _____
12. 1% of 300 = _____
13. 40% of 310 = _____
14. 25% of 544 = _____
15. 5% of 180 = _____
16. 40% of 175 = _____

Tip: 50% is half, 25% is a quarter, 10% is divide by 10, 1% is divide by 100.

PERCENTAGES · AGES 10–11

Build it from blocks

Acorn & Ink

Work out 10%, 5% and 1% first. Then build the percentage you need and add the parts.

Name _____ Date _____ Score _____ / 6

1. Find **45% of 1,000**

10% = _____ 5% = _____ 1% = _____

45% = _____ = _____ = _____

2. Find **85% of 800**

10% = _____ 5% = _____ 1% = _____

85% = _____ = _____ = _____

3. Find **65% of 700**

10% = _____ 5% = _____ 1% = _____

65% = _____ = _____ = _____

4. Find **12% of 100**

10% = _____ 5% = _____ 1% = _____

12% = _____ = _____ = _____

5. Find **15% of 600**

10% = _____ 5% = _____ 1% = _____

15% = _____ = _____ = _____

6. Find **95% of 400**

10% = _____ 5% = _____ 1% = _____

95% = _____ = _____ = _____

PERCENTAGES · AGES 10–11

Sale shop

Acorn & Ink

Everything is in the sale! Work out how much you save, then the new price.

Name _____ Date _____ Score _____ / 16

Football
£120
10% off

You save _____ Sale price _____

Roller skates
£100
25% off

You save _____ Sale price _____

Skateboard
£20
10% off

You save _____ Sale price _____

Box of books
£156
25% off

You save _____ Sale price _____

Kite
£36
25% off

You save _____ Sale price _____

Backpack
£140
5% off

You save _____ Sale price _____

Tent
£35
20% off

You save _____ Sale price _____

Paint set
£40
30% off

You save _____ Sale price _____

PERCENTAGES · AGES 10–11

Acorn & Ink

Percentage word problems

Read each problem carefully. Show your working in the space.

Name _____ **Date** _____ **Score** _____ / 8

1. Isla's family is driving 20 km to the beach. They have done 75% of the journey. How far have they driven?

   Answer: _____

2. A computer game has 60 levels. Priya has finished 10% of them. How many levels is that?

   Answer: _____

3. A film lasts 120 minutes. 10% of it is the ending. How many minutes is the ending?

   Answer: _____

4. A bike costs £150. In a sale it is 20% off. How much money do you save?

   Answer: _____

5. Omar has 50 marbles. 20% of them are blue. How many marbles are not blue?

   Answer: _____

6. A cake weighs 200 g. 25% of the cake is sugar. How many grams of sugar are in the cake?

   Answer: _____

7. There are 35 children at Zara's football club. 60% of them are under 10. How many children are under 10?

   Answer: _____

8. A bottle holds 500 ml of juice. Alfie drinks 25% of it. How many ml does Alfie drink?

   Answer: _____

COLOUR BY SUM · PERCENTAGES

What's the mystery picture?

Acorn & Ink

Work out each sum. Find the answer in the key and colour the square that colour.

2 orange 3 black 4 green 7 sand

8 dark green 12 light blue 15 brown

25% of 48	25% of 48	20% of 60	20% of 60	50% of 24	50% of 24	50% of 24	25% of 48	50% of 24	25% of 48	25% of 48	20% of 60	50% of 24	25% of 48
20% of 60	50% of 24	20% of 60	50% of 24	25% of 48	50% of 24	50% of 24	50% of 24	25% of 48	20% of 60	50% of 24	25% of 48	20% of 60	25% of 48
25% of 48	20% of 60	50% of 24	25% of 48	20% of 60	50% of 24	50% of 24	20% of 60	50% of 24	20% of 60	50% of 24	25% of 48	50% of 24	20% of 60
20% of 60	25% of 48	25% of 48	50% of 24	50% of 24	10% of 20	20% of 10	20% of 10	20% of 10	50% of 24	25% of 48	50% of 24	25% of 48	50% of 24
20% of 60	25% of 48	25% of 48	20% of 60	50% of 4	50% of 4	20% of 75	50% of 30	20% of 75	25% of 8	25% of 8	20% of 60	25% of 48	20% of 60
10% of 30	50% of 24	50% of 24	10% of 20	25% of 8	20% of 75	25% of 8	20% of 10	50% of 4	20% of 75	50% of 4	50% of 4	25% of 48	50% of 24
25% of 28	25% of 48	50% of 24	10% of 20	20% of 75	20% of 10	20% of 75	50% of 30	10% of 20	25% of 60	50% of 4	50% of 4	20% of 60	50% of 24
50% of 14	20% of 60	50% of 24	50% of 4	50% of 30	20% of 10	20% of 10	10% of 20	20% of 10	50% of 30	25% of 8	50% of 4	25% of 48	25% of 48
10% of 70	10% of 70	25% of 48	50% of 4	10% of 20	50% of 30	25% of 60	20% of 75	50% of 30	50% of 4	50% of 4	50% of 24	25% of 48	50% of 24
10% of 70	25% of 28	25% of 28	10% of 70	25% of 28	25% of 28	10% of 70	50% of 14	25% of 28	20% of 35	10% of 70	50% of 14	50% of 14	50% of 24
25% of 48	50% of 24	10% of 70	50% of 14	25% of 28	25% of 28	20% of 35	20% of 35	25% of 28	20% of 35	25% of 28	10% of 70	50% of 14	25% of 28
25% of 48	20% of 60	50% of 24	20% of 60	20% of 60	50% of 24	50% of 24	50% of 24	50% of 24	50% of 24	25% of 48	25% of 48	25% of 48	50% of 24
20% of 60	25% of 48	25% of 48	20% of 60	20% of 60	20% of 60	50% of 24	20% of 60	25% of 48	50% of 24	50% of 24	50% of 24	20% of 60	25% of 48
20% of 20	25% of 16	20% of 20	10% of 40	20% of 20	10% of 40	20% of 20	50% of 8	25% of 16	50% of 8	25% of 16	25% of 16	10% of 40	10% of 40
20% of 40	20% of 40	20% of 40	10% of 80	20% of 40	10% of 80	20% of 40	20% of 40	20% of 40	20% of 40	50% of 16	25% of 32	25% of 32	20% of 40
10% of 80	25% of 32	50% of 16	50% of 16	25% of 32	50% of 16	10% of 80	50% of 16	20% of 40	20% of 40	25% of 32	50% of 16	25% of 32	20% of 40

Acorn & Ink

Percentages of amounts

Answers are shown in red.

Name _____ Date _____

1. 50% of 100 = **50**
2. 30% of 460 = **138**
3. 1% of 400 = **4**
4. 50% of 348 = **174**
5. 15% of 240 = **36**
6. 60% of 155 = **93**
7. 10% of 300 = **30**
8. 40% of 450 = **180**
9. 75% of 84 = **63**
10. 15% of 480 = **72**
11. 25% of 456 = **114**
12. 1% of 300 = **3**
13. 40% of 310 = **124**
14. 25% of 544 = **136**
15. 5% of 180 = **9**
16. 40% of 175 = **70**

Tip: 50% is half, 25% is a quarter, 10% is divide by 10, 1% is divide by 100.

Build it from blocks

Acorn & Ink

Answers are shown in red.

Name _____ Date _____

1. Find **45% of 1,000**

10% = **100** 5% = **50** 1% = **10**

45% = **10% × 4 + 5%** = **400 + 50** = **450**

2. Find **85% of 800**

10% = **80** 5% = **40** 1% = **8**

85% = **10% × 8 + 5%** = **640 + 40** = **680**

3. Find **65% of 700**

10% = **70** 5% = **35** 1% = **7**

65% = **10% × 6 + 5%** = **420 + 35** = **455**

4. Find **12% of 100**

10% = **10** 5% = **5** 1% = **1**

12% = **10% + 1% × 2** = **10 + 2** = **12**

5. Find **15% of 600**

10% = **60** 5% = **30** 1% = **6**

15% = **10% + 5%** = **60 + 30** = **90**

6. Find **95% of 400**

10% = **40** 5% = **20** 1% = **4**

95% = **10% × 9 + 5%** = **360 + 20** = **380**

Acorn & Ink

Sale shop

Answers are shown in red.

Name _____ Date _____

Football
£120
10% off

You save **£12** Sale price **£108**

Roller skates
£100
25% off

You save **£25** Sale price **£75**

Skateboard
£20
10% off

You save **£2** Sale price **£18**

Box of books
£156
25% off

You save **£39** Sale price **£117**

Kite
£36
25% off

You save **£9** Sale price **£27**

Backpack
£140
5% off

You save **£7** Sale price **£133**

Tent
£35
20% off

You save **£7** Sale price **£28**

Paint set
£40
30% off

You save **£12** Sale price **£28**

Acorn & Ink

Percentage word problems

Answers are shown in red.

Name _____ **Date** _____

1. Isla's family is driving 20 km to the beach. They have done 75% of the journey. How far have they driven?

   Answer: **15 km**

2. A computer game has 60 levels. Priya has finished 10% of them. How many levels is that?

   Answer: **6 levels**

3. A film lasts 120 minutes. 10% of it is the ending. How many minutes is the ending?

   Answer: **12 minutes**

4. A bike costs £150. In a sale it is 20% off. How much money do you save?

   Answer: **£30**

5. Omar has 50 marbles. 20% of them are blue. How many marbles are not blue?

   Answer: **40 marbles**

6. A cake weighs 200 g. 25% of the cake is sugar. How many grams of sugar are in the cake?

   Answer: **50 g**

7. There are 35 children at Zara's football club. 60% of them are under 10. How many children are under 10?

   Answer: **21 children**

8. A bottle holds 500 ml of juice. Alfie drinks 25% of it. How many ml does Alfie drink?

   Answer: **125 ml**

It's a snail!

Acorn & Ink

Here's how the finished picture looks.

2 orange 3 black 4 green 7 sand

8 dark green 12 light blue 15 brown

25% of 48	25% of 48	20% of 60	20% of 60	50% of 24	50% of 24	50% of 24	25% of 48	50% of 24	25% of 48	25% of 48	20% of 60	50% of 24	25% of 48
20% of 60	50% of 24	20% of 60	50% of 24	25% of 48	50% of 24	50% of 24	50% of 24	25% of 48	20% of 60	50% of 24	25% of 48	20% of 60	25% of 48
25% of 48	20% of 60	50% of 24	25% of 48	20% of 60	50% of 24	50% of 24	20% of 60	50% of 24	20% of 60	50% of 24	25% of 48	50% of 24	20% of 60
20% of 60	25% of 48	25% of 48	50% of 24	50% of 24	10% of 20	20% of 10	20% of 10	20% of 10	50% of 24	25% of 48	50% of 24	25% of 48	50% of 24
20% of 60	25% of 48	25% of 48	20% of 60	50% of 4	50% of 4	20% of 75	50% of 30	20% of 75	25% of 8	25% of 8	20% of 60	25% of 48	20% of 60
10% of 30	50% of 24	50% of 24	10% of 20	25% of 8	20% of 75	25% of 8	20% of 10	50% of 4	20% of 75	50% of 4	50% of 4	25% of 48	50% of 24
25% of 28	25% of 48	50% of 24	10% of 20	20% of 75	20% of 10	20% of 75	50% of 30	10% of 20	25% of 60	50% of 4	50% of 4	20% of 60	50% of 24
50% of 14	20% of 60	50% of 24	50% of 4	50% of 30	20% of 10	20% of 10	10% of 20	20% of 10	50% of 30	25% of 8	50% of 4	25% of 48	25% of 48
10% of 70	10% of 70	25% of 48	50% of 4	10% of 20	50% of 30	25% of 60	20% of 75	50% of 30	50% of 4	50% of 4	50% of 24	25% of 48	50% of 24
10% of 70	25% of 28	25% of 28	10% of 70	25% of 28	25% of 28	10% of 70	50% of 14	25% of 28	20% of 35	10% of 70	50% of 14	50% of 14	50% of 24
25% of 48	50% of 24	10% of 70	50% of 14	25% of 28	25% of 28	20% of 35	20% of 35	25% of 28	20% of 35	25% of 28	10% of 70	50% of 14	25% of 28
25% of 48	20% of 60	50% of 24	20% of 60	20% of 60	50% of 24	50% of 24	50% of 24	50% of 24	50% of 24	25% of 48	25% of 48	25% of 48	50% of 24
20% of 60	25% of 48	25% of 48	20% of 60	20% of 60	20% of 60	50% of 24	20% of 60	25% of 48	50% of 24	50% of 24	50% of 24	20% of 60	25% of 48
20% of 20	25% of 16	20% of 20	10% of 40	20% of 20	10% of 40	20% of 20	50% of 8	25% of 16	50% of 8	25% of 16	25% of 16	10% of 40	10% of 40
20% of 40	20% of 40	20% of 40	10% of 80	20% of 40	10% of 80	20% of 40	20% of 40	20% of 40	20% of 40	50% of 16	25% of 32	25% of 32	20% of 40
10% of 80	25% of 32	50% of 16	50% of 16	25% of 32	50% of 16	10% of 80	50% of 16	20% of 40	20% of 40	25% of 32	50% of 16	25% of 32	20% of 40