Maths Revision

Number and Place Value

Use numbers from -100 to 1 000 000

(the curriculum is not specific about how far to use negative numbers)

Counting

Count forwards and backwards in 4, 6, 7, 8, 9, 25, 50, steps of powers of 10 (10, 100, 1000, ...)

7, 14, 21, 28, 35, 42, ...

625, 600, 575, 550, 525, ...

57 382, 67 382, 77 382, 87 382, ...

Find 10, 100 or 1000 more or less than a given number

What is 100 less than 1902? **What is 1000 more than 3249?**

Count forwards and backwards through zero

6, 5, 4, 3, 2, 1, 0, -1, -2, -3 ...

Place Value

Recognise the place value of each digit in up to four-digit numbers

hundred thousands ten thousands thousands hundreds tens ones

245 392

Compare and Order Numbers

Compare using <, > or =

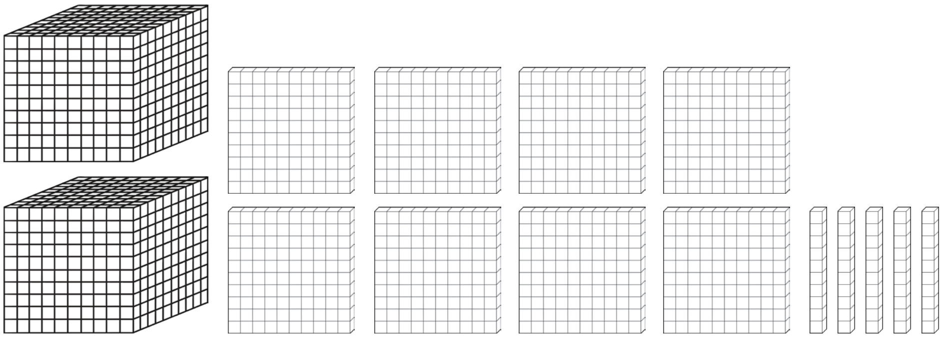
141 141 < 144 114 **501 243 > 501 234**

Smallest **11 112** **11 211** **121 211** **122 121** **122 211** **Greatest**

Identify, Represent and Estimate

Use models and representations of numbers

2850 can be represented by



Rounding

Round numbers to the nearest 10, 100, 1000, 10 000 or 100 000

Remember 5 rounds up

4500 rounded to the nearest 1000 is 5000 (the 500 rounds up)

253 450 to the nearest 10 000 is 250 000 (the 3450 rounds down)

Read and Write Numbers in Numerals and Words

344 285 is three hundred and forty-four thousand, two hundred and eighty-five

Roman Numerals

Use the following Roman numerals to represent numbers to 100:

Roman	Numeral
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

CCXIX = 219

DCXXVI = 626

CMXLVIII = 948

MDCCCLXXI = 1871

Solve Problems

Here are 3 years written in Roman Numerals. Order the years from earliest to latest:

MMIX MCMXCIX MMXV

MCMCXIX (1999) MMIX (2009) MMXV (2015)

Addition and Subtraction

Add and Subtract Mentally

Add and subtract three-digit numbers and ones, tens and hundreds

376 + 3 = 379   **376 + 40 = 416**   **376 + 200 = 576**

Mental Methods

Add and subtract numbers mentally with larger numbers

15 672 – 3200 = 12 472

Formal Methods

72 698 + 61 562 becomes

$$\begin{array}{cccccc} & 7 & 2 & 6 & 9 & 8 \\ + & 6 & 1 & 5 & 6 & 2 \\ \hline 1 & 3 & 4 & 2 & 6 & 0 \\ \hline & & 1 & 1 & 1 & \end{array}$$

Answer: 13 4260

84 935 - 12 423 becomes

$$\begin{array}{cccccc} & 8 & 4 & 9 & 3 & 5 \\ - & 1 & 2 & 4 & 2 & 3 \\ \hline & 7 & 2 & 5 & 1 & 2 \\ \hline \end{array}$$

Answer: 72 512

64 812 - 29 364 becomes

$$\begin{array}{cccccc} & {}^{5}\cancel{6} & {}^{1}4 & {}^{7}\cancel{8} & {}^{1}{}^{0}\cancel{1} & {}^{1}2 \\ - & 2 & 9 & 3 & 6 & 4 \\ \hline & 3 & 5 & 4 & 4 & 8 \\ \hline \end{array}$$

Answer: 35 448

Estimate and Inverse

Estimate by rounding to check accuracy: 54318 + 21298 ≈ 54300 + 21300 ≈ 75600

Inverse: check 7932 – 3457 = 4475, by 3457 + 4475 = 7932

Solve Problems

Multi-step problems

8451 people visit a cinema on one day. There are two films showing. 3549 adults and 946 children see an adventure film, 1263 adults and a number of children see a an animation. How many more children see the animation than the adventure film?

3549 + 1263 = 4812 adults

8451 – 4812 = 3639 children

3639 – 946 = 2693 children see the animation

2693 – 946 = 1747 more children see the animation than the adventure film.

Multiplication and Division

Multiplication Tables

Multiplication and division facts to 12 × 12

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

x	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

visit twinkl.com

Multiplying and Dividing

Use place value and known facts: $400 \times 5 = 2000$, $630 \div 7 = 90$

Multiply by 0 and 1 and divide by 1: $285 \times 1 = 285$, $285 \times 0 = 0$, $285 \div 1 = 285$

Multiplying and dividing whole numbers and decimals by 10, 100 and 1000:

When multiplying or dividing a number by 10, 100 or 1000, keep the digits in the number together. When multiplying the number gets larger and when dividing the number gets smaller. The numbers will move in place value by the number of 0's.

$45 \times 10 = 450$ **$6.7 \times 100 = 670$** **$902 \times 1000 = 902\,000$**

$59 \div 10 = 5.9$ **$4506 \div 100 = 45.06$** **$382 \div 1000 = 0.382$**

Factor Pairs and Commutativity

All the factor pairs of 56 are 1 and 56, 2 and 28, 4 and 14, 8 and 7.

Use this to solve: 56 pencils are shared between 4 tables. How many pencils does each table receive?

The common factors of 32 and 56 are 1, 2, 4 and 8 because they are factors of both 32 and 56.

Commutativity means changing the order of the numbers in a calculation does not change the answer: $5 \times 9 \times 2 = 5 \times 2 \times 9 = 10 \times 9 = 90$

Prime Numbers

Prime numbers only have 1 and itself as factors.

Prime factors are factors of a number that are prime numbers: the prime factors of 21 are 3 and 7, the prime factors of 24 are 2 and 3

Composite numbers are non-prime numbers: 4 is a composite number because 2 is a factor.

Recall the prime numbers to 19: 2, 3, 5, 7, 11, 13, 17 and 19

Square and Cube Numbers

The square numbers are 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225,...

e.g. $3^2 = 3 \times 3 = 9$ $7^2 = 7 \times 7 = 49$

The cube numbers are 1, 8, 27, 64, 125,...

e.g. $2^3 = 2 \times 2 \times 2 = 8$ $5^3 = 5 \times 5 \times 5 = 125$

Formal Methods

Use formal methods to multiply up to 4 digit numbers by 1 digit numbers

27 × 4 becomes

$$\begin{array}{r} 2\;7 \\ \times\quad 4 \\ \hline 1\;0\;8 \\ \hline {\scriptstyle 2\;\;} \end{array}$$

Answer: 108

382 × 7 becomes

$$\begin{array}{r} 3\;8\;2 \\ \times\qquad 7 \\ \hline 2\;6\;7\;4 \\ \hline {\scriptstyle 5\;\;1\;\;\;} \end{array}$$

Answer: 2394

2471 × 6 becomes

$$\begin{array}{r} 2\;4\;7\;1 \\ \times\qquad\quad 6 \\ \hline 1\;4\;8\;2\;6 \\ \hline {\scriptstyle 2\;\;4\;\;\;\;\;} \end{array}$$

Answer: 14 826

Use the formal long multiplication method for multiplying 2 digit numbers by 2 digit numbers

27 × 14 becomes

$$\begin{array}{r} 2\;7 \\ \times\;1\;4 \\ \hline 1\;0\;8 \\ 2\;7\;0 \\ \hline 3\;7\;8 \\ \hline \end{array}$$

Answer: 378

Use short division for up to 4 digit numbers divided by one-digit numbers

74 ÷ 4 becomes

$$\begin{array}{r} 1\;9 \\ 4\,\overline{\big)\,7\;{}^{3}6} \end{array}$$

Answer: 19

487 ÷ 5 becomes

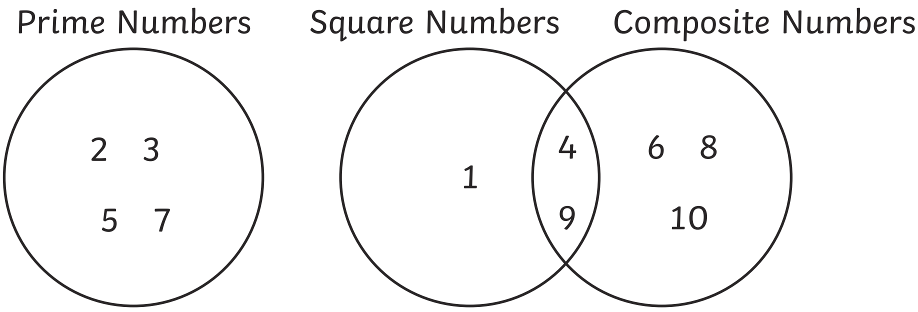
$$\begin{array}{r} 9\;7\;\text{r}\;2 \\ 5\,\overline{\big)\,4\;8\;{}^{3}7} \end{array}$$

Answer: 97 r 2

Solve Problems

Using knowledge of factors, prime numbers, square and cube numbers

Explain why the numbers 1 to 10 are placed in this Venn Diagram in this way.



Missing number problems: $\square \times 3 = 45$ or $56 \div \square = 14$

Word Problems:

A teacher has four new boxes of pencils, each with 12 pencils, and a tray with 37 pencils. The teacher shares equally all the pencils between 5 tables. How many pencils does each table receive?

12 × 4 = 48 new pencils

48 + 37 = 85 pencils

85 ÷ 5 = 17 pencils per table

Scaling Problems with Simple Fractions

12 pizzas are cut into quarters. Into how many pieces of pizza will the pizzas be cut?

Correspondence problems

Jenna has 2 t-shirts and 4 pairs of shorts. How many different combinations of the t-shirts and shorts does Jenna have?

120 pencils are shared equally between 3 classes. How many pencils will they each receive?

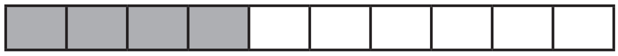
Using the distributive law **39 × 7 = 30 × 7 + 9 × 7 = 210 + 63 = 273**

Fractions

Tenths

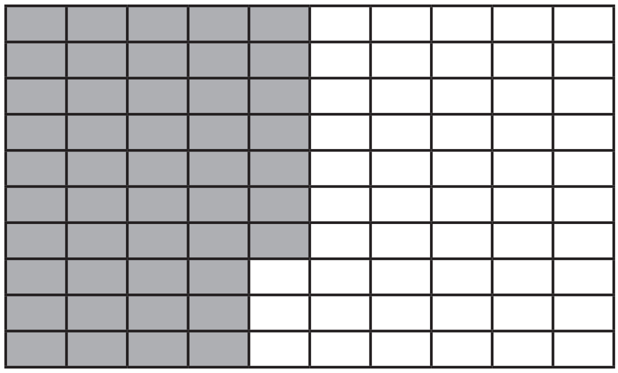
Counting: $\frac{7}{10}$, $\frac{6}{10}$, $\frac{5}{10}$, $\frac{4}{10}$, ...

Dividing into 10 equal parts or by 10



Counting: $\frac{47}{100}$, $\frac{46}{100}$, $\frac{45}{100}$, $\frac{44}{100}$, ...

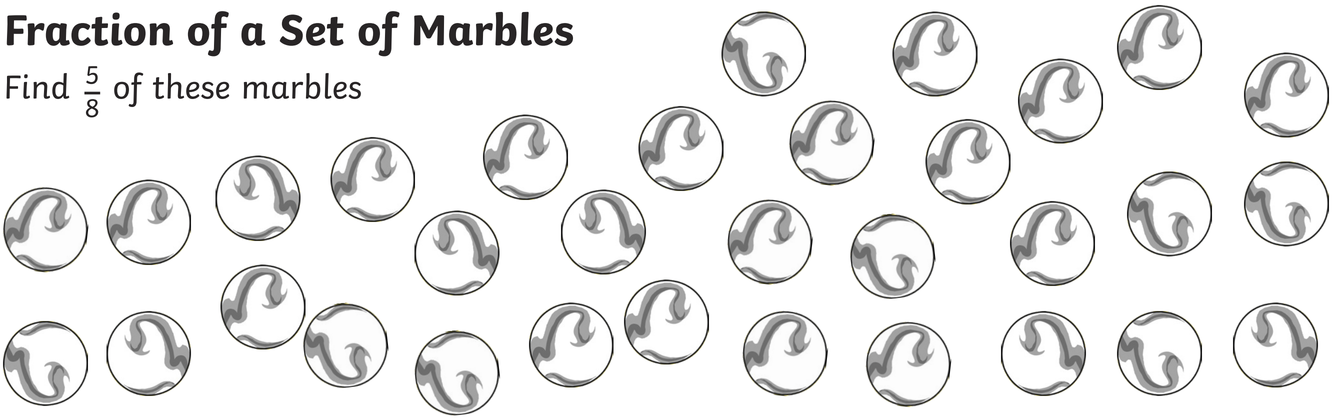
Dividing into 100 equal parts or by 100 or tenths by 10



There are 10 thousandths in one hundredth and 100 thousandths in one tenth

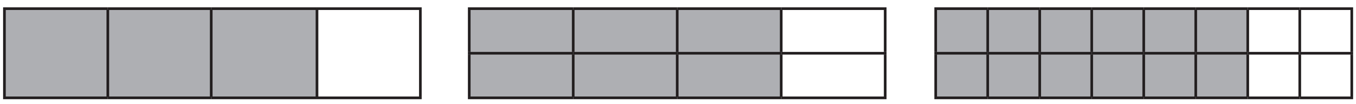
Fraction of a Set of Marbles

Find $\frac{5}{8}$ of these marbles



32 ÷ 8 = 4 **4 × 5 = 20**

Equivalent Fractions



$\frac{3}{4} = \frac{6}{8} = \frac{12}{16}$

visit twinkl.com

<table>
<tr><td colspan="16">1</td></tr>
<tr><td colspan="8">$\frac{1}{2}$</td><td colspan="8">$\frac{1}{2}$</td></tr>
<tr><td colspan="4">$\frac{1}{4}$</td><td colspan="4">$\frac{1}{4}$</td><td colspan="4">$\frac{1}{4}$</td><td colspan="4">$\frac{1}{4}$</td></tr>
<tr><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td><td>$\frac{1}{16}$</td></tr>
</table>

<table>
<tr><td colspan="24">1</td></tr>
<tr><td colspan="8">$\frac{1}{3}$</td><td colspan="8">$\frac{1}{3}$</td><td colspan="8">$\frac{1}{3}$</td></tr>
<tr><td colspan="4">$\frac{1}{6}$</td><td colspan="4">$\frac{1}{6}$</td><td colspan="4">$\frac{1}{6}$</td><td colspan="4">$\frac{1}{6}$</td><td colspan="4">$\frac{1}{6}$</td><td colspan="4">$\frac{1}{6}$</td></tr>
<tr><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td><td colspan="2">$\frac{1}{12}$</td></tr>
<tr><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td><td>$\frac{1}{24}$</td></tr>
</table>

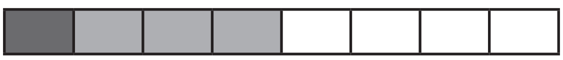
<table>
<tr><td colspan="20">1</td></tr>
<tr><td colspan="4">$\frac{1}{5}$</td><td colspan="4">$\frac{1}{5}$</td><td colspan="4">$\frac{1}{5}$</td><td colspan="4">$\frac{1}{5}$</td><td colspan="4">$\frac{1}{5}$</td></tr>
<tr><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td><td colspan="2">$\frac{1}{10}$</td></tr>
<tr><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td><td>$\frac{1}{20}$</td></tr>
</table>

Write 4 fractions that are equivalent to $\frac{3}{4}$ $\mathbf{\frac{6}{8}}$ $\mathbf{\frac{9}{12}}$ $\mathbf{\frac{12}{16}}$ $\mathbf{\frac{15}{20}}$

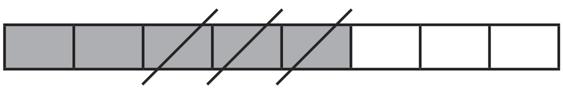
Add and Subtract Fractions with the Same Denominator and with Denominators that are Multiples

Add or subtract the numerator, keeping the denominator the same. The answer can be expressed as an equivalent fraction.

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$



$\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \frac{1}{4}$



If the denominators are different, convert the fractions to equivalent fractions with the same denominator before adding or subtracting.

$$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

visit twinkl.com

Compare and Order

Unit fractions smallest $\frac{1}{8}$ $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{3}$ greatest

Fractions with the same denominator $\frac{1}{5} < \frac{3}{5}$

Fractions with denominators that are multiples $\frac{5}{8} > \frac{1}{4}$

Mixed Numbers and Improper Fractions

Mixed fraction (whole number and fraction) $1\frac{2}{3} = \frac{5}{3}$ Improper fraction (numerator is larger than the denominator)

Multiply Fractions

Multiply proper fractions and mixed numbers by whole numbers

Proper fractions - multiply the numerator by the whole number: $\frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$

Mixed numbers – multiply the whole numbers and add the product of the fraction and whole number: $2\frac{2}{3} \times 3 = 6 + \frac{6}{3} = 6 + 2 = 8$

Decimal Equivalents

Tenths and hundredths:

$\frac{7}{10} = 0.7$ $\frac{43}{100} = 0.43$

$\frac{1}{4} = 0.25$ $\frac{1}{2} = 0.5$ $\frac{3}{4} = 0.75$

Write decimals as a fraction:

$0.67 = \frac{67}{100}$

Division by 10 and 100

$2 \div 10 = 0.2$ $2 \div 100 = 0.02$ $25 \div 10 = 2.5$ $25 \div 100 = 0.25$

Rounding Decimals

To the nearest whole number:

0.5 rounds to 1 because the 5 rounds up

2.35 rounds to 2 because the 3 rounds down (ignoring the 5)

To one decimal place:

0.05 rounds to 0.1 because the 5 rounds up.

Read, Write, Order and Compare Decimals

0.45 is zero point four five (not zero point forty-five)

$0.45 < 0.5$ $0.561 > 0.516$

Percentages

% means out of 100

$50\% = \frac{50}{100} = \frac{1}{2}$ $41\% = \frac{41}{100}$

Solve Problems

Fractions

Adil divides his marbles into tenths. He wants to give two friends a number of the tenths of his marbles and keep the rest himself. Write 3 ways that he could share the marbles.

eg. $\frac{4}{10} + \frac{1}{10} + \frac{5}{10}$

Measure and Money Problems

Ellie buys a new shirt for £4.75 and a pair of trousers for £3.50 in a sale. She pays with a £10 note. What change will she receive?

A bag of potatoes weight 2.45kg. How much will 4 bags cost that all weigh the same?

Decimal Problems to 3 Decimal Places

A packet of sugar weighs 1.348kg. $\frac{3}{4}$kg is used to bake some cakes.
How will the packet weigh now?

1.348kg – 0.75kg = 0.598kg

Knowing Percentage and Decimal Equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, $\frac{*}{10}$, $\frac{*}{25}$

Order the following from smallest to largest:

25%, $\frac{2}{5}$, 0.3

visit twinkl.com

Measurement

Estimate, Measure, Compare, Add and Subtract

In all cases, be able to estimate with some accuracy prior to measuring

Lengths (mm/cm/m)

Measure and draw lines using a ruler in centimetres (cm) or millimetres (mm).

This line is 9.5cm or 95mm long.

Mass (g/kg)

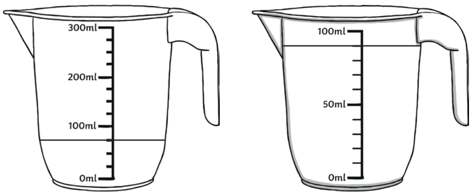
Measure the mass of objects using different scales

3 apples weigh 435g. One is eaten, and the 2 remaining apples weigh 285g. What is the mass of the eaten apple?

435g – 285g = 150g

Capacity (ml/l)

Which jug has more water?



75ml **90ml**

Convert between units

Length: 1 km = 1000m, 1m = 100cm or 1000mm. 1cm = 10mm

Mass: 1kg = 1000g

Capacity/ Volume: 1l = 1000ml

Time: 1 year = 365 days (leap year 366 days), 1 week = 7 days,

30 days hath September,
April, June and November.
All the rest have 31,
Excepting February alone
Which only has but 28 days clear
And 29 in each leap year.

1 day = 24 hours, 1 hour = 60 minutes, 1 minute = 60 seconds

Convert between metric and imperial units

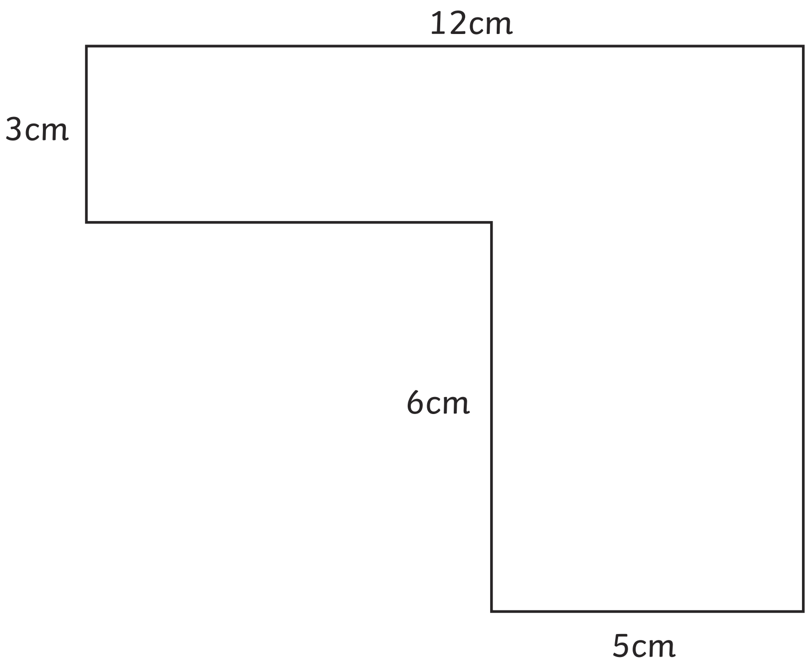
1 inch ≈ 2.5cm   5 miles ≈ 8 km   1kg ≈ 4.5lb (pounds)   1 litre ≈ 1.75 pints

Perimeter

The perimeter is the measurement around the edge of a shape

The sides of this rectangle are 8cm and 3cm, so the perimeter is 22cm.

Measure and calculate the perimeter of rectilinear shapes (including squares)

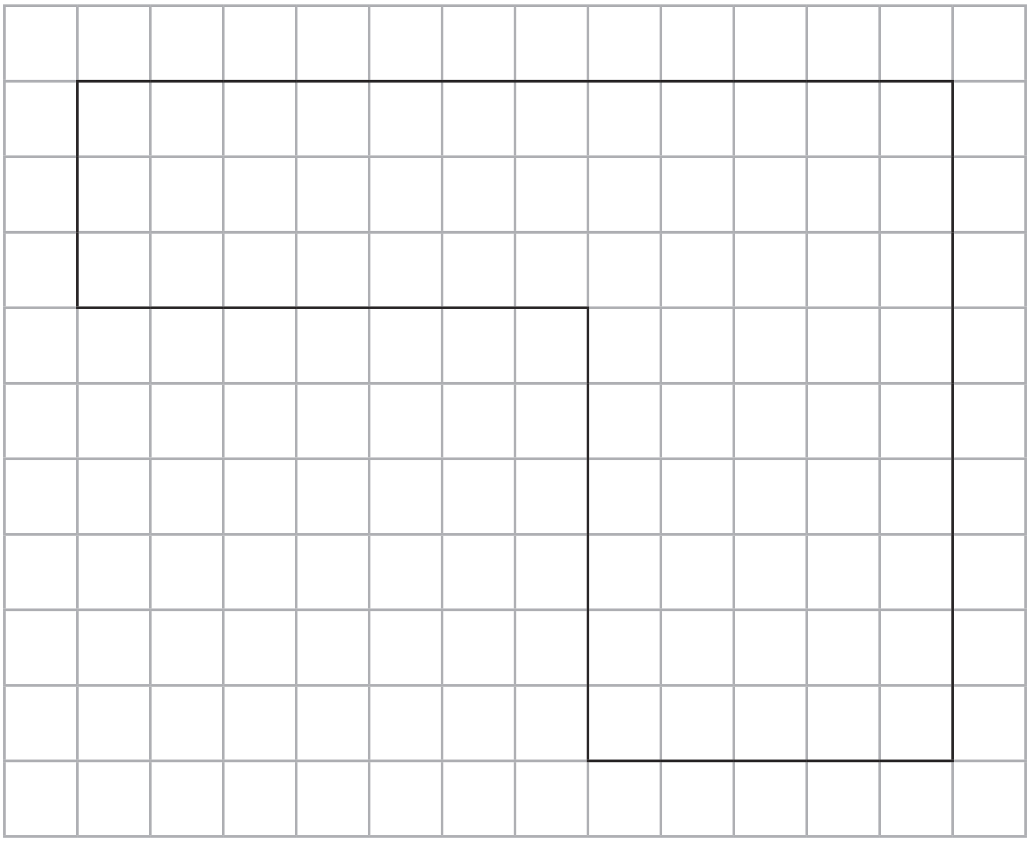


Perimeter = 42cm

visit twinkl.com

Area

Area of rectilinear shapes by counting squares

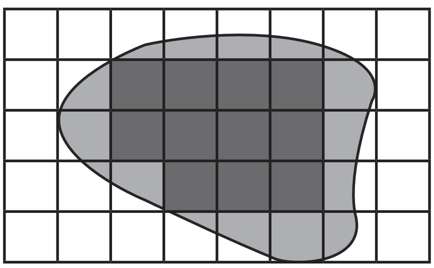


Area = 66cm²

Calculate the area of rectangles: multiply the length of two adjacent sides

Area = 8cm × 3cm = $24cm^2$

Estimate the area of irregular shapes



Count the whole squares and the squares with more than half included in the shape.

visit twinkl.com

Money

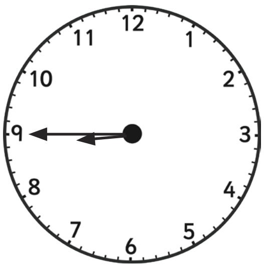
Add and subtract giving change

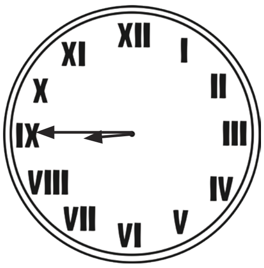
Jude buys and apple and an orange costing 25p and 15p. How much change from 50p?

Time

Analogue clocks and 12/24 hour time

These clocks show quarter to nine:





Record time in hours, minutes and seconds

The maths lesson lasted 1 hour and 5 minutes. The art lesson was one hour and twenty minutes. The art lesson was longer than the maths lesson.

Morning is am, afternoon is pm

A film lasts 136 minutes. How long is the film in hours and minutes?

2 hours and 16 minutes

Solve Problems

2 equal bottles of water contain 500ml of drink. How many litres will 7 bottles hold?

2 bottles hold 500ml, 1 bottle will hold 250ml = 0.25l

7 bottles will hold 0.25l × 7 = 1.75l

A 6.5kg bag of soil is divided into 20 pots equally. Each pot needs 0.5kg. How much more does each pot need?

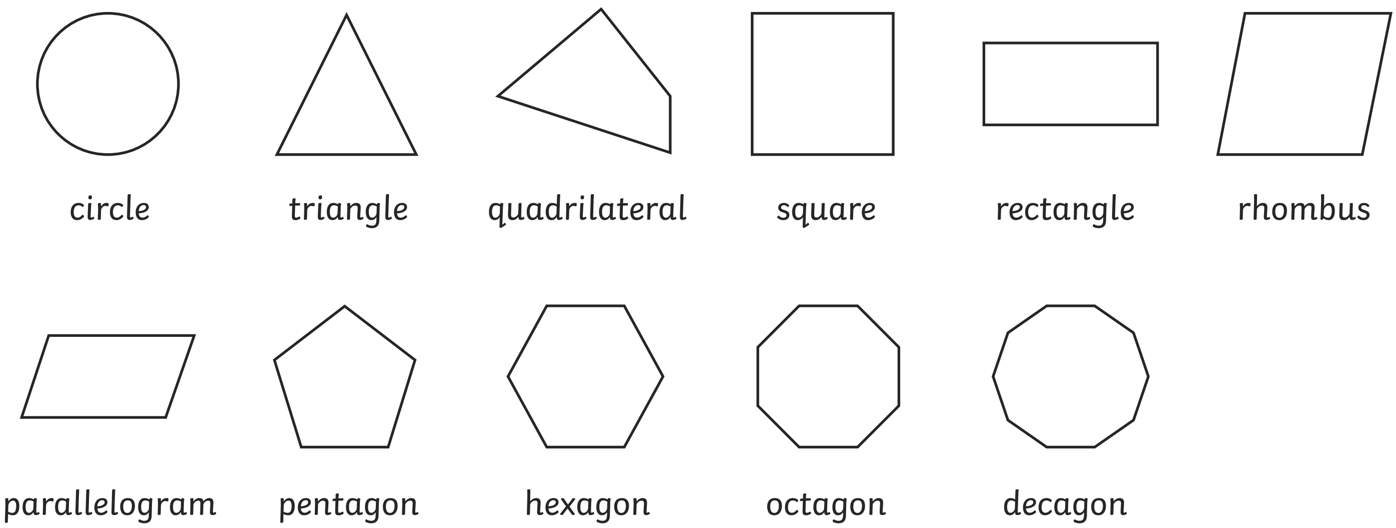
6.5 ÷ 20 = 0.325

0.5 – 0.325 = 0.175kg is needed by each pot.

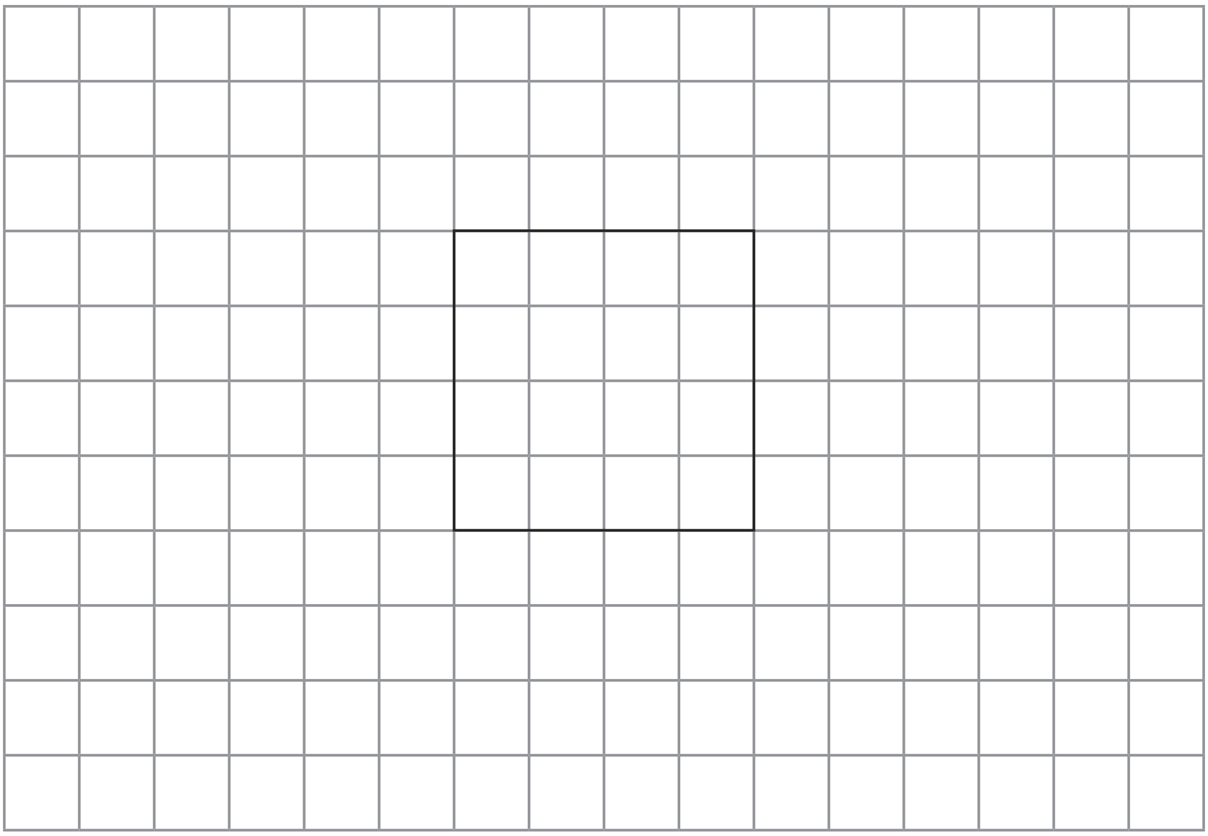
Geometry – Shape

2D Shapes

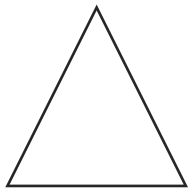
Main shapes: circle, triangle, quadrilateral, square, rectangle, rhombus, parallelogram, pentagon, hexagon, octagon, decagon

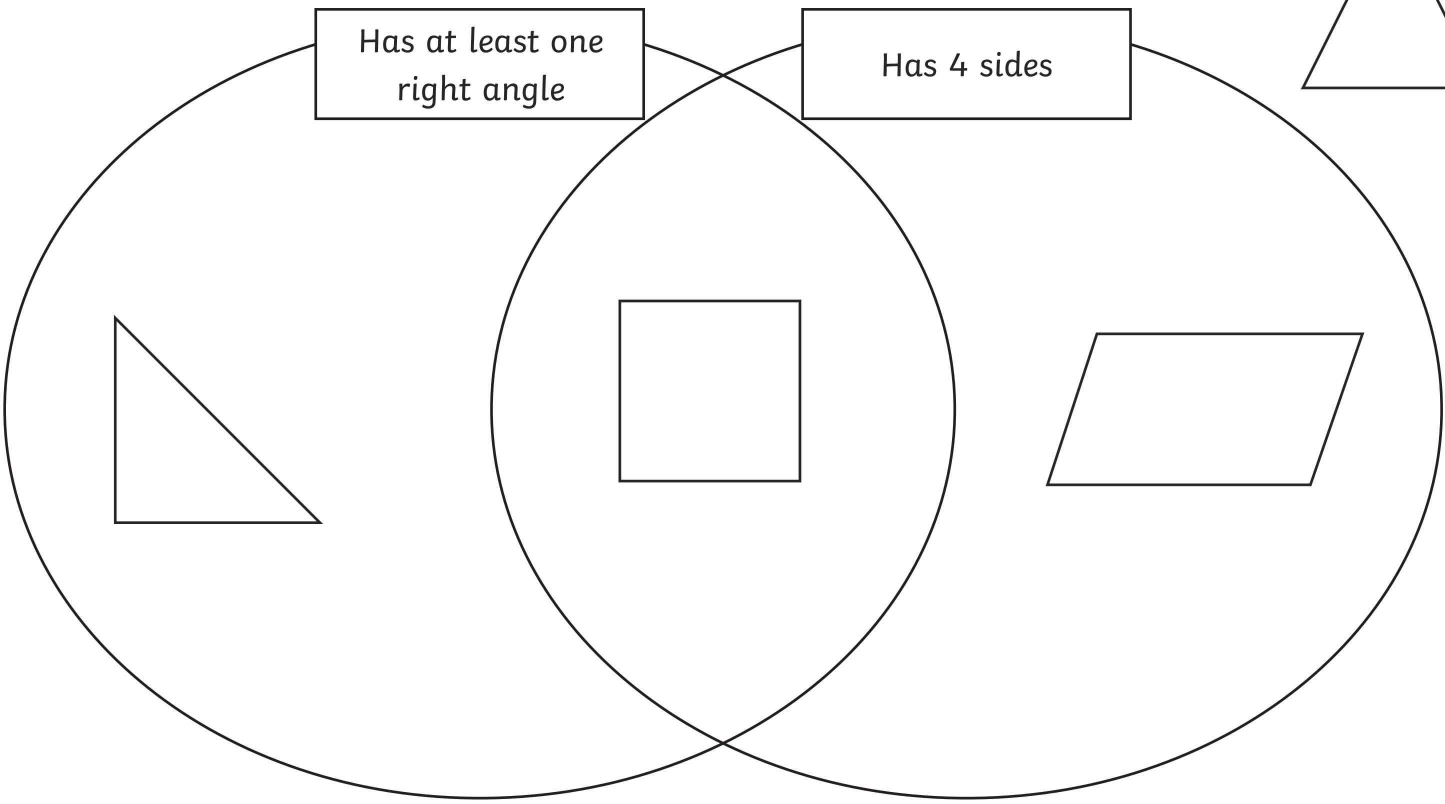


Draw a square on 1cm squared paper with sides of 4cm.



Compare and classify shapes

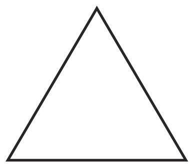




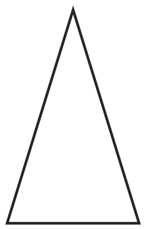
The 4 shapes are classified in this Venn diagram.

Triangles

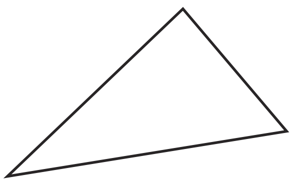
Equilateral (all sides and angles equal)



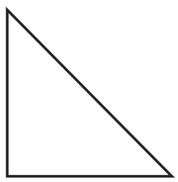
Isosceles (2 sides and angles equal)



Scalene (no sides and angles equal)

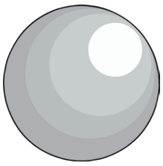


Right-angled triangle (one angle a right angle)

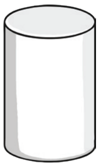


3D Shapes

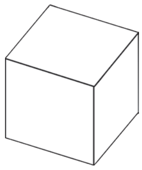
Main shapes: sphere, cylinder, cube, cuboid, tetrahedron, square-based pyramid, triangular prism, pentagonal prism, hexagonal prism



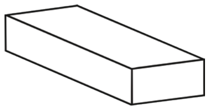
sphere



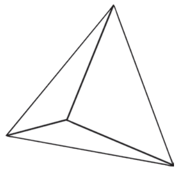
cylinder



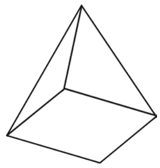
cube



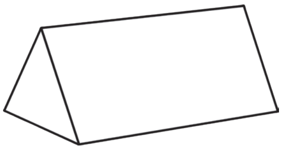
cuboid



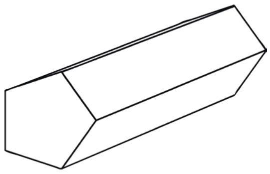
tetrahedron



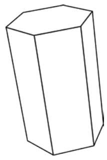
square-based pyramid



triangular prism



pentagonal prism

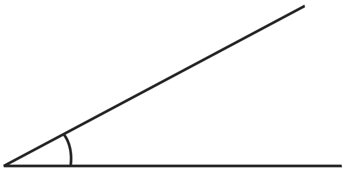


hexagonal prism

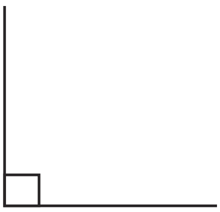
Recognise 2D representations and make models from modelling materials

Angles

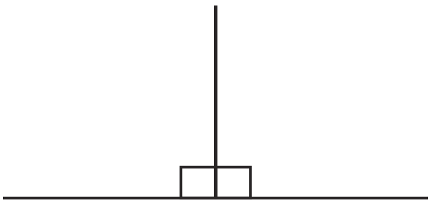
An angle measures a turn



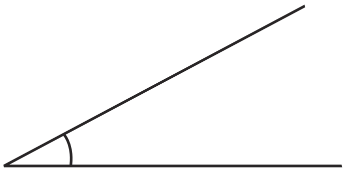
A right angle is the corner of a square



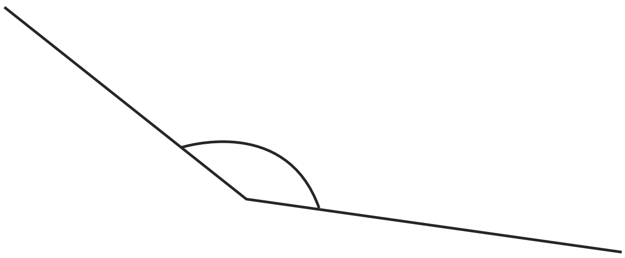
2 right angles make a straight line



An acute angle is less than a right angle (90°)



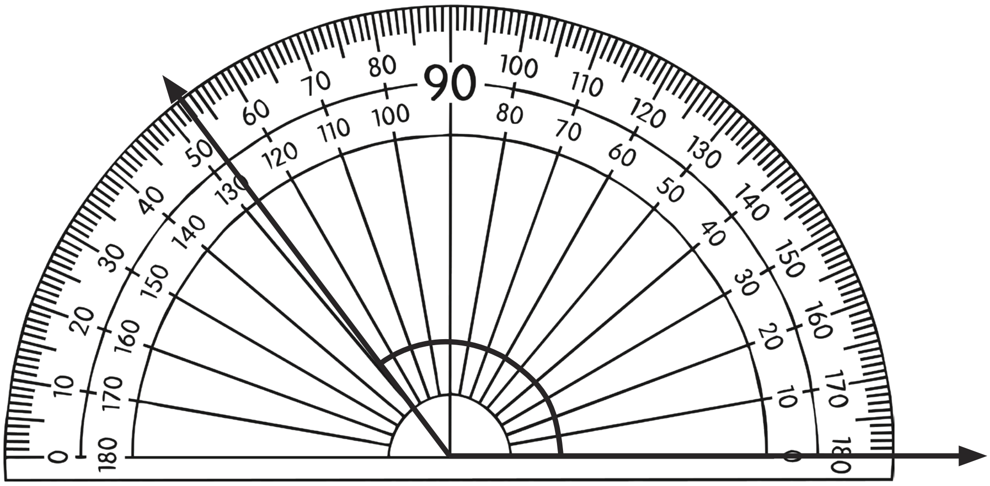
An obtuse angle is between a right angle and a straight line.



Draw and Measure Angles

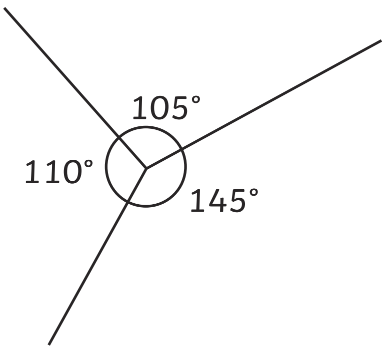
One of the lines must be on the 0

Read the scale on the other line round from 0

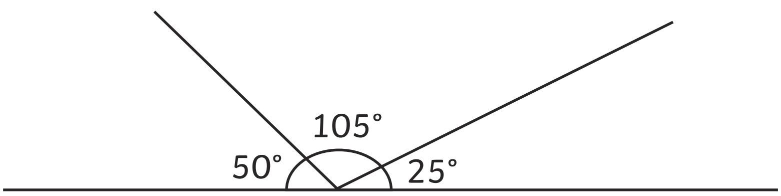


The answer is 127°

The angles at a point and whole turn total 360° (four right angles)



Angles at a point on a line total 180°



One right angle = 90° Two right angles = 180° Three right angles = 270°

Lines

Horizontal

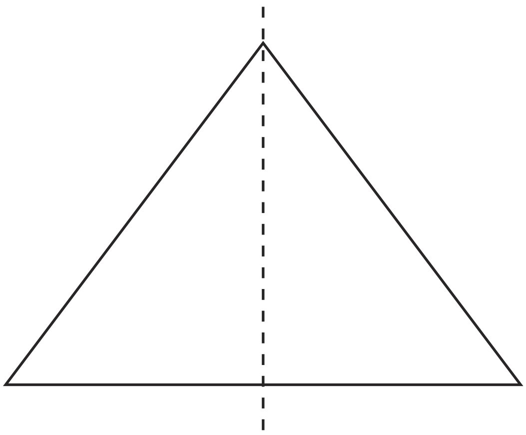
Vertical

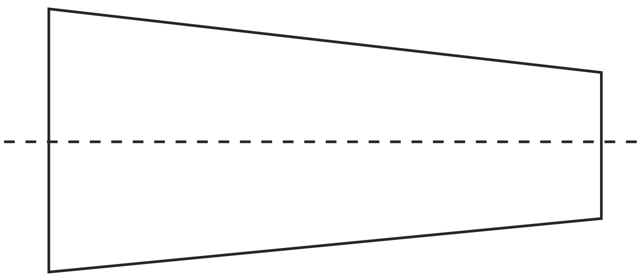
Parallel Lines

Perpendicular lines (at a right angle)

Symmetry

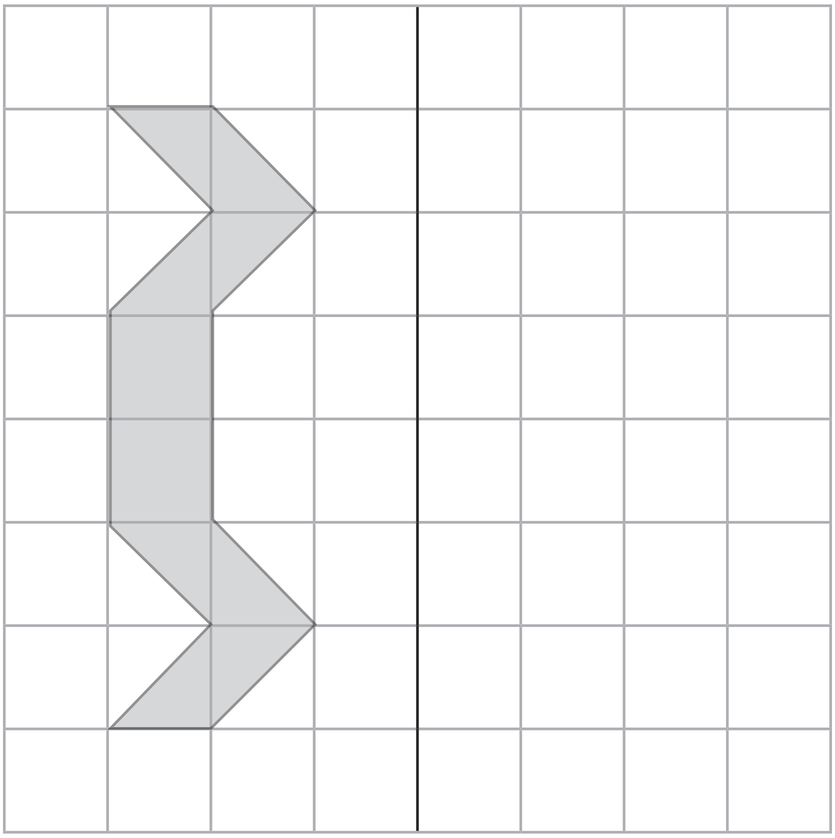
Identify lines of symmetry





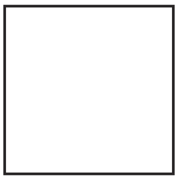
visit twinkl.com

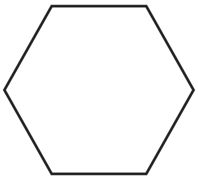
Complete a symmetrical figure



Regular and Irregular Polygons

Regular polygons have equal sides and equal angles.

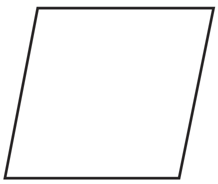


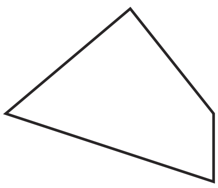


square regular hexagon

Irregular polygons do not have equal sides and angles. They may have equal angles or equal sides but not both.

A rhombus has equal sides and a rectangle has equal angles but they are not regular (unless they are a square).

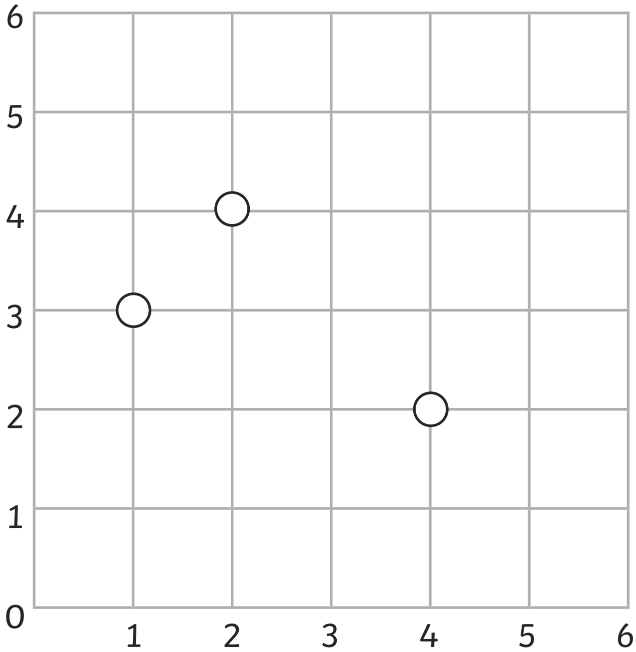




rhombus rectangle irregular quadrilateral

Geometry – Position and Direction

Coordinates



Label A, B and C

The coordinates are

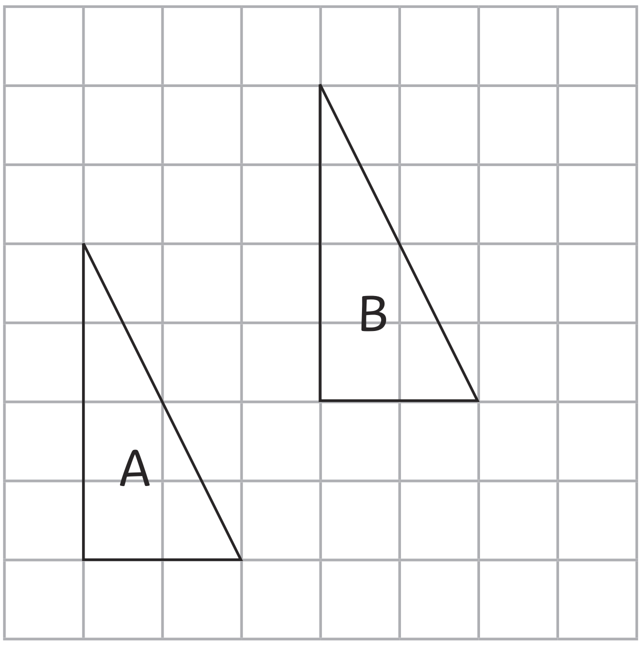
A (1,3)

B (2,4)

C (4,2)

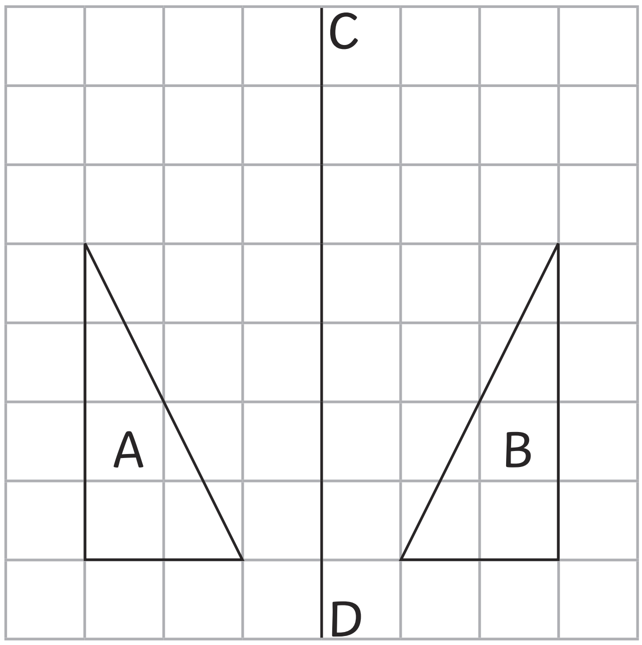
What are the coordinates of the point that will complete a rectangle? **(3,1)**

Translation



The triangle A is translated three squares to the right and two squares up to triangle B.

Reflection



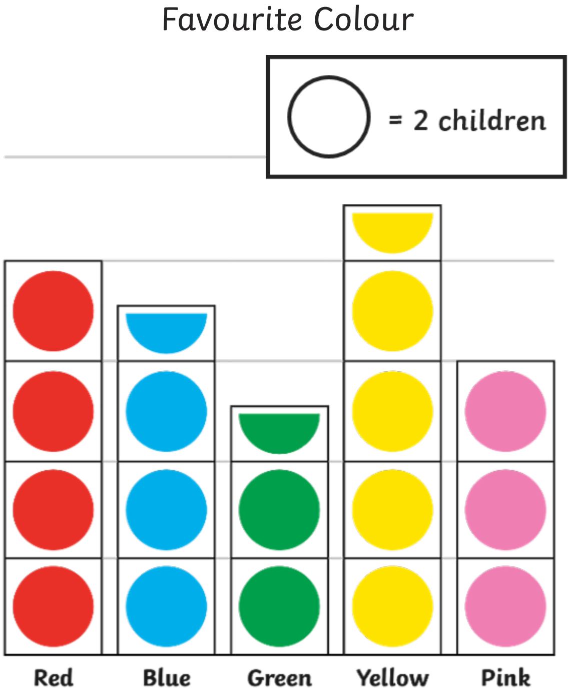
The triangle A is reflected about the line CD to triangle B.

visit twinkl.com

Statistics

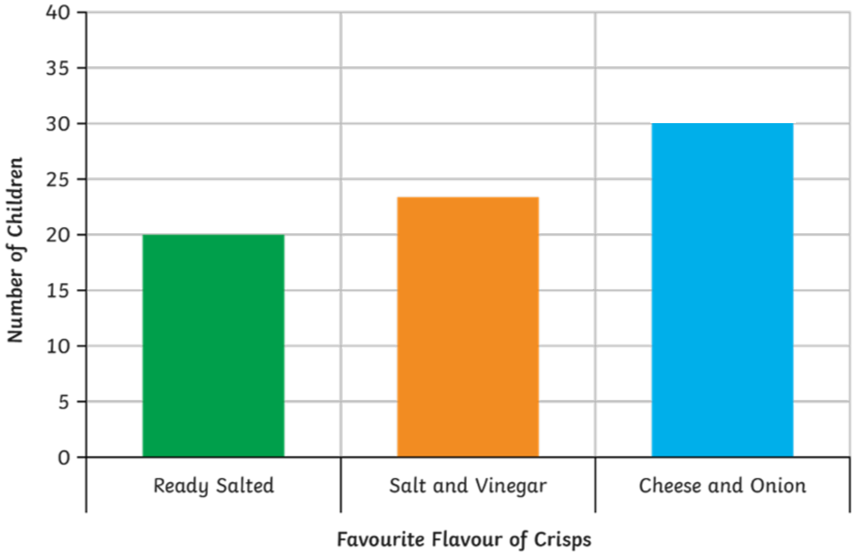
Present data in these graphs and tables and solve problems:

Pictograms



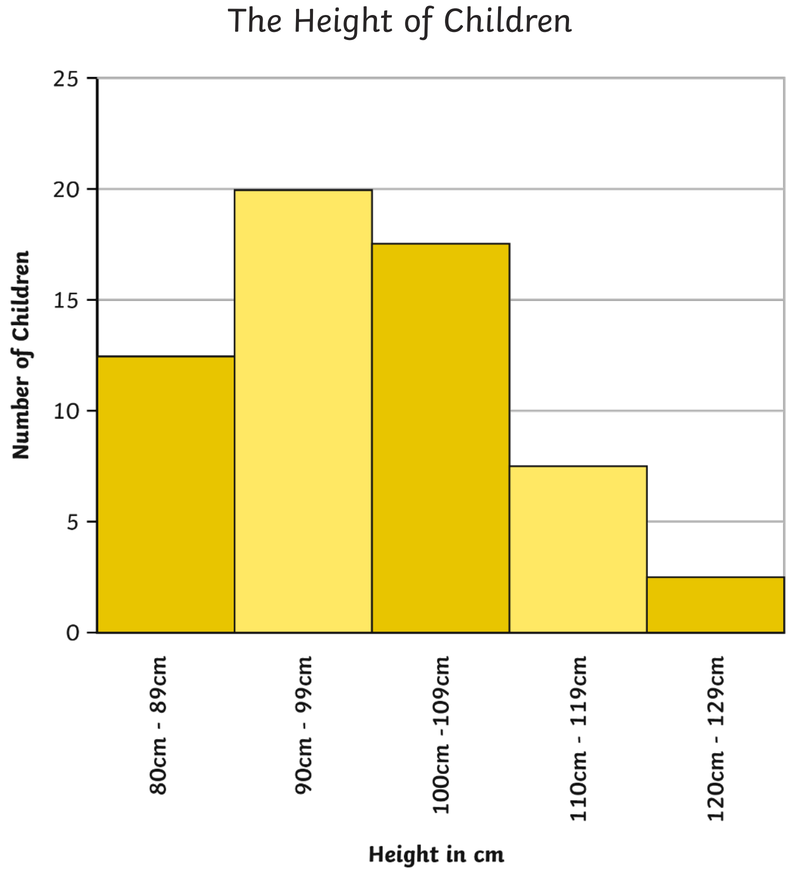
How many children chose their favourite colour? **35**

Bar Charts



How many more children chose cheese and onion as their favourite crisps than ready salted? **10**

Continuous data can have any value – usually a measurement



How many children are shorter than 1m? (Add the first 2 bars)

Tables

Here is a table of the chocolate bars sold to customers in a shop over 4 days.

	Monday	Tuesday	Wednesday	Thursday
Saturn	2	1	3	4
Twin	0	2	2	3
Stars	5	3	2	0
Cluster	2	2	2	2
Treasure	1	3	5	0
Tiger	6	3	4	1
Plimmy	1	3	2	2

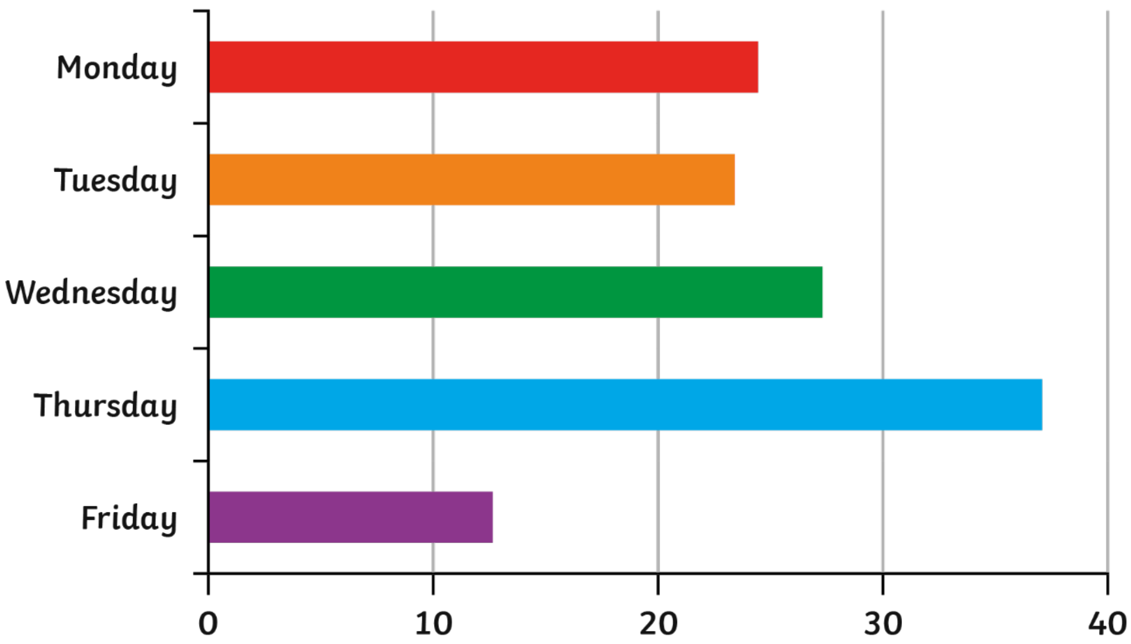
Which chocolate bar is the most popular? **Tiger**

visit twinkl.com

Time Graphs

Time graphs show the changing of data over time. These often take the form of line graphs but can also be a bar chart.

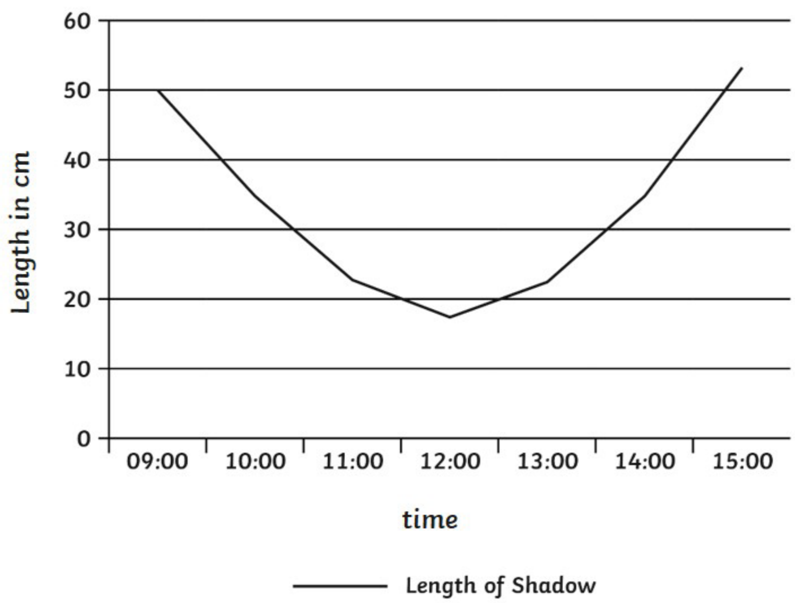
Number of Children Who Have a School Meal



How many school meals were served during the week?

Line Graphs

Length of a Shadow



In which hour was the largest change in the length of the shadow?

visit twinkl.com

Timetables

Train timetable from London to Newcastle

Destination	Journey A	Journey B	Journey C
London	10:20	11:30	16:40
Derby	12:20		18:00
Sheffield	12:40	13:10	18:30
Hull	13:20	13:55	19:15
Newcastle	14:25	14:40	

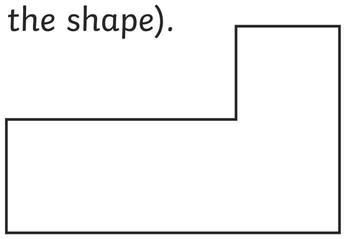
Which train takes the least time to get from London to Hull?

twinkl Quality Standard Approved

Important Vocabulary

This list is not exhaustive. Some vocabulary is described above.

Vocabulary	Meaning
2D shapes	Flat shapes with no thickness. In theory a 2D shape cannot be picked up, but in practice shapes made of paper are counted as 2D. (A list of shapes is included in the section on shape.)
3D shapes	A shape with 3 dimensions that can be picked up. (A list of shapes is included in the section on shape.)
Analogue	A clock face with hands.
Area	The amount of space taken up by a shape.
Calculation	The working out of an answer using addition, subtraction, multiplication or division.
Capacity	How much a container holds.
Commutativity	The answer is the same no matter which way the calculation is completed: e.g. $2 + 4 = 4 + 2$ or $2 \times 4 = 4 \times 2$.
Composite Number	A number that more than 2 factors. (1 is not a composite num-ber because it only has 1 factor.)
Denominator	The bottom part of a fraction.
Digit	A single symbol used to make a numeral: 7 (All numbers are made from the ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.)
Digital	A clock using digits to tell the time.
Discrete	A whole number of a set of objects.
Equivalent fraction	A fraction which has the same value but is divided into a different number of parts: e.g. $\frac{1}{2} = \frac{2}{4}$
Factor	A factor of a number is a number into which the number can be divided with no remainders: e.g. the factors of 8 are 1, 2, 4, and 8.
Factor pairs	Factor pairs are 2 factors that are multiplied together to make the number: e.g. the factor pairs of 8 are 1 and 8, 2 and 4.
Fraction	A number express as the number of parts into which the whole has been divided: e.g $\frac{3}{4}$ represents 3 parts out of 4.
Improper fraction	A fraction where the numerator is larger than the denominator: e.g $\frac{9}{2}$
Integer	A whole number with no parts: e.g. 5, 18, 109.
Inverse	An inverse operation is the opposite or reverse of an operation: e.g. the inverse of $6 - 4 = 2$ is $2 + 4 = 6$ or the inverse of $6 \div 3 = 2$ is $2 \times 3 = 6$.

Mass	Often known as weight – how much matter is in an object.
Mixed number	A whole number and a proper fraction: e.g. $4\frac{1}{2}$
Numeral	A symbol, symbols, word or words that stand for a number: 37 or thirty-seven.
Numerator	The top part of a fraction.
Perimeter	The measurement around an object.
Place value	The value of each digit in any number: In 27 the 2 represents 2 tens.
Polygon	A 2D shape with any number of sides.
Prime factor	A factor which is a prime number: e.g. 3 is a prime factor of 12.
Prime Number	A number that only has 2 factors: 1 and itself. (1 is not a prime number because it only has 1 factor.)
Proper fraction	A fraction where the numerator is smaller than the denominator: e.g $\frac{1}{2}$
Quadrant	A quarter of the space represented by coordinates, bordered by the x and y axes.
Quadrilateral	Any four sided shape.
Rectilinear	A shape with all angles as right angles (the right angle can be inside or outside the shape). 
Scale	The mathematical relationship between different measurements or number of objects.
Square number	The result of multiplying a whole number by itself: e.g. 2 × 2 = 4
The Distributive Law	Multiplying 2 numbers by a number and adding, gives the same answer as multiplying the sum of the 2 numbers by the other number: e.g. 4 × (3 + 2) = 4 × 3 + 4 × 2.
Translation	The movement of a shape without rotation or reflection.
Volume	The amount of space taken up by an object.
Weight	Mass is measured by how much something weighs, but this can change in different locations.