

Year 7 Knowledge Maps Term 5 & 6

Your Name	
Your Email Address	

How to analyse a novel

- 1) **Setting:** What is the setting? What time of day/night is it? What are the surroundings? What is the atmosphere?
- 2) **Mood/Tone:** What is the feeling of the description/story? How does the author want the reader to feel?
- 3) **Character:** Who are the protagonists (heroes) and antagonists (villains)? What is the history of the characters? What are their relationships?
- 4) **Narrative structure:** How does the writer build tension and suspense? What journey are you taken on as a reader?
- 5) **Literary devices:** How does the writer use language to describe settings/characters and create worlds?

Section A of your End of Year Exam will ask you to analyse an extract from BISP

**The Boy
in the
Striped
Pyjamas**
JOHN BOYNE

Plot Summary

"The Boy in the Striped Pyjamas" is a fictional story that offers a unique perspective on how prejudice, hatred and violence affect innocent people, particularly children, during wartime. Through the lens of an eight-year-old boy largely shielded from the reality of World War II, we witness a forbidden friendship that forms between Bruno, the son of Nazi commandant, and Shmuel, a Jewish boy held captive in a concentration camp. Though the two are separated physically by a barbed wire fence, their lives become inescapably intertwined. The imagined story of Bruno and Shmuel sheds light on the brutality, senselessness and devastating consequences of war from an unusual point of view. Together, their tragic journey helps recall the millions of innocent victims of the Holocaust.

THINK: As you study the novel, always think about how it makes the reader feel about war



Key Themes

- Childlike Innocence
- The horrors of the Holocaust
- Friendship
- Different backgrounds and circumstances
- Two sides of human nature
- Compassion
- The evil of the Nazi regime.

Revision Websites and Audio Guide

http://www.bbc.co.uk/bbcfilms/film/the_boy_in_the_stripped_pyjamas

<https://www.shmoop.com/boy-in-the-striped-pajamas/summary.html>

<https://www.youtube.com/watch?v=KtU5sEex1C4>

Author – John Boyne

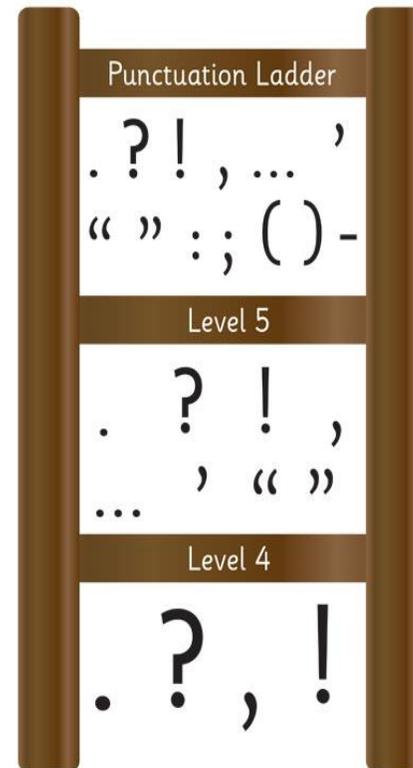
John Boyne is an Irish novelist. He is the author of ten novels for adults and five novels for younger readers. His novels are published in over 50 languages. Boyne was born in Dublin, where he still lives. His first short story was published by the Sunday Tribune and in 1993 was shortlisted for a Hennessy Literary Award. A graduate of Trinity College Dublin and the University of East Anglia, in 2015 he was awarded an Honorary Doctorate of Letters from the University of East Anglia.

The 5 Ingredients of a Short Story

- 1) Setting:** Where is my setting going to be? What time of day/night is it? What are the surroundings? What is the atmosphere?
- 2) Mood/Tone:** What will be the feeling of my description/story? How do I want the read to feel?
- 3) Character:** Will I have a protagonist (hero) and antagonist (villain)? What is the history of my character? What are their relationships?
- 4) Narrative structure:** How will I build tension and suspense? What will happen in your climax? What journey are you taking the reader on?
- 5) Literary devices:** How will I use language to describe settings/characters and create worlds?

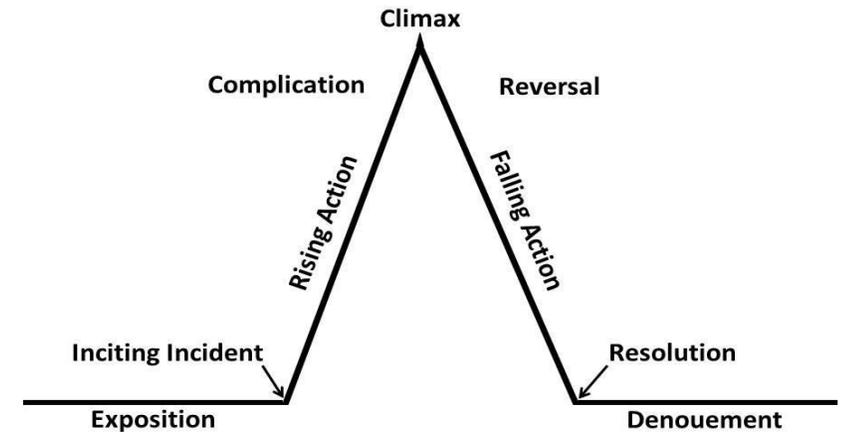
Section B of your End of Year Exam will involve you writing descriptively.

Here are a few reminders...



The Structure of a Story

Freytag Pyramid



Websites to help develop descriptive writing:

<http://www.bbc.co.uk/bitesize/standard/english/lit/form/descriptive/revision/1/>

http://www.readingrockets.org/strategies/descriptive_writing

<https://www.thoughtco.com/model-descriptive-paragraphs-1690573>

Overview

In this term, learners will be revising the whole years worth of topics in preparation for the end of year assessment.

Key Topics:

1. Analysing & Displaying Data
2. Number Skills
3. Equations, Functions & Formulae
4. Fractions
5. Angles & Shapes
6. Decimals
7. Equations
8. Multiplicative Reasoning
9. Perimeter, Area & Volume
10. Sequences & Graphs

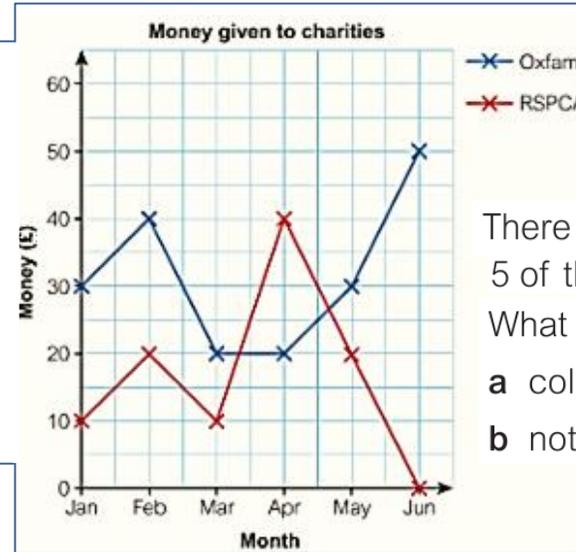
Websites and further reading

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Unit 1:

The line graph shows the money, in £, John gave to two charities.

- a How much was given to each charity in January?
- b In which month was £50 given to Oxfam?
- c In which month was more money given to the RSPCA than Oxfam?
- d How much more money was given to Oxfam than the RSPCA in May?



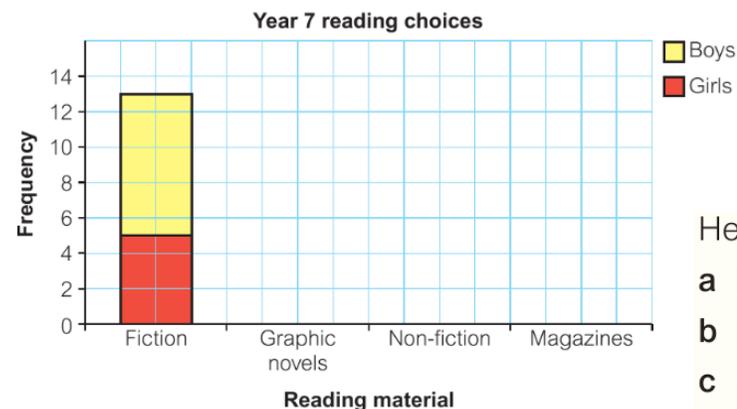
There are 15 dogs in a dog training class
5 of them are collies.

What fraction of the dogs are

- a collies
- b not collies?

Ollie asked some Year 7 students what they like reading most.

	Fiction	Graphic novels	Non-fiction	Magazines
Boys		7	6	5
Girls		5	4	6



Fiona recorded the number of times she used her smartphone each hour one Sunday evening:

3, 0, 1, 2, 7

- a i Work out the mean.
- ii Work out the range.
- b Work out the mean and range for Monday evening:
2, 1, 1, 2, 3

He started to draw a compound bar chart for the data.

- a How many girls prefer fiction?
- b How many boys prefer fiction?
- c Copy and complete the bar chart.

Units 2 - 4:

Estimate the answer to each calculation.

a $\frac{73}{8.7}$

b $\frac{52}{6.9}$

c $19.2 - \frac{61}{8.8}$

a $2\frac{1}{4}$

b $3\frac{1}{2}$

c $5\frac{2}{3}$

d $2\frac{3}{10}$

e $2\frac{5}{6}$

f $10\frac{3}{5}$

Write down the number that you square for each calculation.

a 2×3^2

b $2^2 \times 3$

c $(2 \times 3)^2$

d $4^2 \times (5 - 2)$

e $4 \times (5 - 2)^2$

f $4 \times (5 - 2^2)$

Match each algebraic expression to its description.

a $x + 3$

i 3 less than x

b $x - 3$

ii x less than 3

c $3x$

iii 3 more than x

d $\frac{x}{3}$

iv one third of x

e $3 - x$

v 3 times x

Copy and complete.

a $m(m + 1) =$

b $b(b + 2) =$

c $d(3 + d) =$

d $r(r - 1) =$

e $m(m - 3) =$

f $t(10 - t) =$

Simplify

a $2t + 3t$

b $5g + 7g$

c $10y - 3y$

d $5p - p$

e $10y + 2b + 3y$

f $6m + n + 5m$

g $4a + 3b - a$

h $3q + 2b - 3b$

i $4t + 7 - 2t$

j $4y + 8 - 2 + 3y$

Write these mixed numbers as improper fractions.

Work out $690 \div 15$

$$15 \overline{) 690}$$

Copy and complete.

a $2w \times 3w =$

b $4a \times 2a =$

c $3b \times 5b =$

d $8m \times 3m =$

e $9n \times 11n =$

Work out

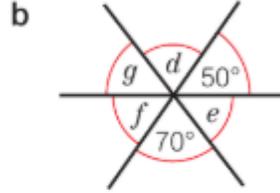
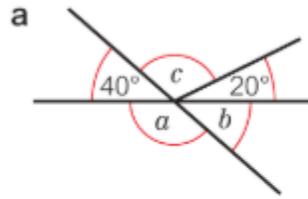
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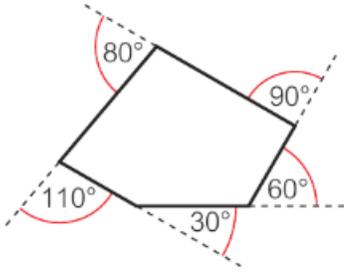
What do you notice?

Unit 5:

Reasoning Work out the angles marked with letters. Give reasons for your answers.

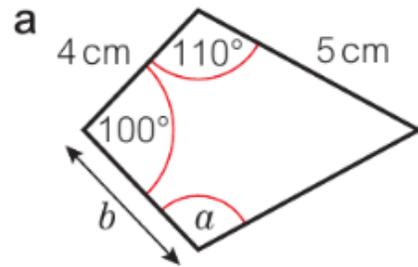


Jess measured the exterior angles of this pentagon and added them together.

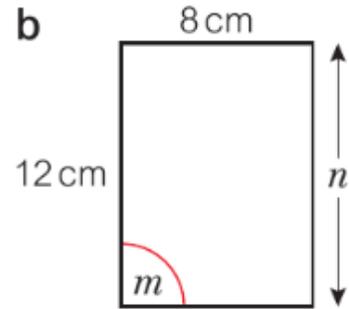


Explain how you know her measurements are wrong.

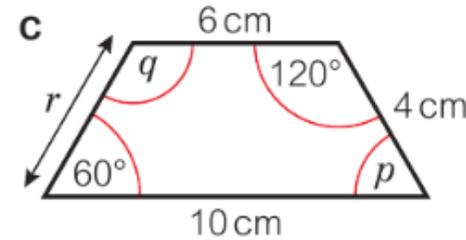
Work out the angles and sides marked with letters.



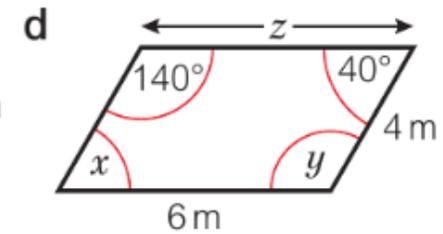
kite



rectangle

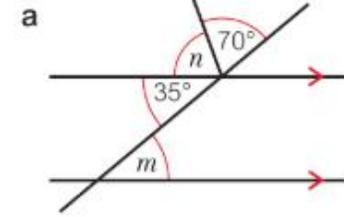


isosceles trapezium

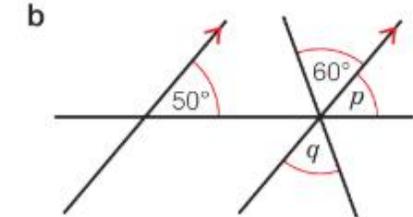


parallelogram

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$m = \underline{\hspace{2cm}}$ (alternate angles)
 $n = \underline{\hspace{2cm}}$ (angles on a straight line)



$p = \underline{\hspace{2cm}}$ (corresponding angles)
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Units 6-7:

Write these numbers in order from smallest to largest.

- a** 7.2, 6.3, 6.5, 7.4
b 4.6, 4.06, 4.4, 4.44, 4.5
c 0.04, 0.33, 0.004, 0.404, 0.033

Work out these. Use an estimate to check your answers.

- a** $3.5 + 6.8$
b $4.7 + 2.5$
c $9.4 + 4.63$
d $3.1 + 7.92$
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Work out

- a** 1.4×0.23
b 0.81×2.5
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- a** $41.5 \div 5$
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c $21.08 \div 4$

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- a** $0.9 \div 0.03$
b $0.08 \div 0.02$
c $0.15 \div 0.2$
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Solve these equations.

Check each answer by substituting back into the equation.

- a** $5x = 35$
b $6y = 48$
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a Expand the brackets on both sides of the equals sign.

$$4(n + 2) = 5(n + 1)$$

b Solve your equation.

c Solve $3(x - 2) = 7(x - 6)$

Find both solutions of these equations.

- a** $x^2 = 81$
b $2x^2 = 200$

Write these decimals as percentages.

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Work out

- a** 12% of 60
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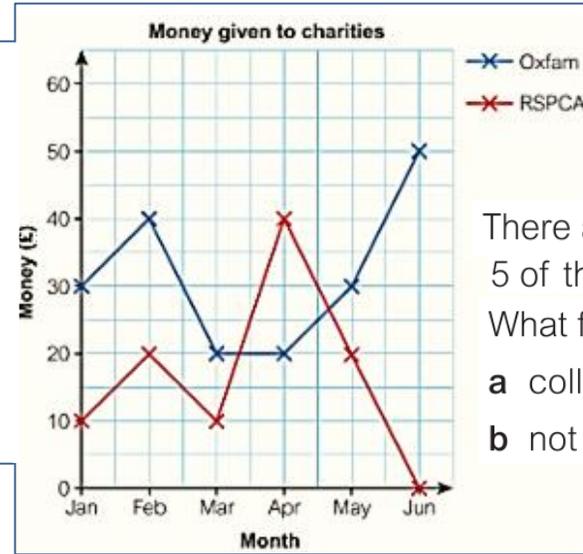
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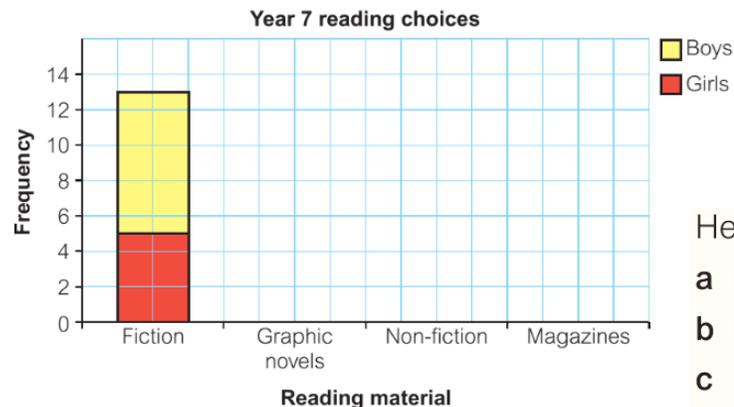
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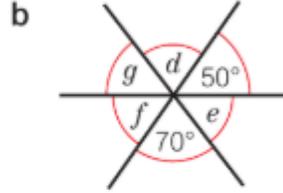
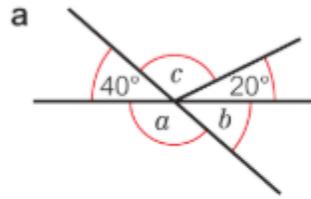
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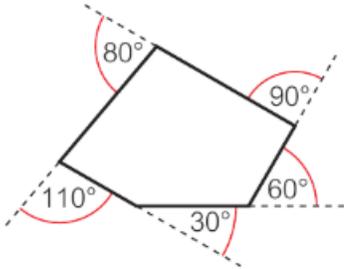
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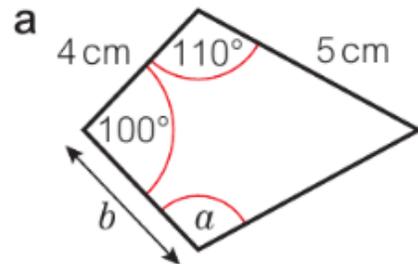


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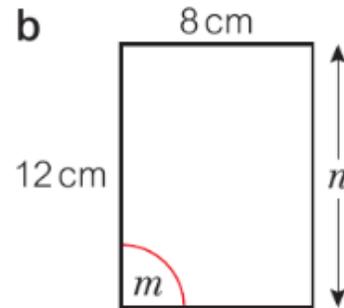


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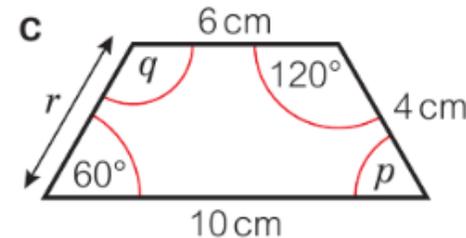
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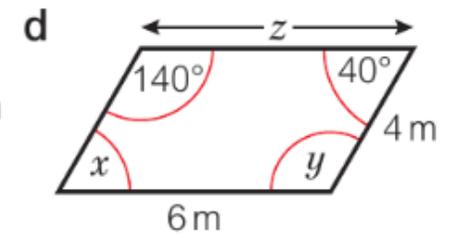
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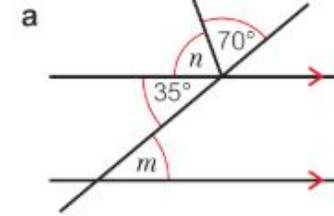


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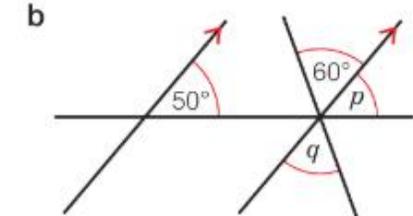


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Overview

In this term, learners will be studying up to three units which will include sequences and graphs, and transformations.

Key Terms:

Unit 9:

Sequence
Pattern
Coordinate
Straight-Line Graph

Rules

Infinite
Finite
Arithmetic
nth term

Unit 10:

Congruent
Enlargement
Reflection
Rotation

Translation

Transformation

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Key skills

Unit 9 Sequences and graphs

- 9.1 Sequences
- 9.2 Pattern sequences
- 9.3 Coordinates
- 9.4 Extending sequences
- 9.5 Straight-line graphs
- 9.6 Position-to-term rules

Unit 10 Transformations

- 10.1 Congruency and enlargements
- 10.2 Symmetry
- 10.3 Reflection
- 10.4 Rotation
- 10.5 Translations and combined transformations

Unit 9:

Key point

A number **sequence** is a set of numbers that follow a rule. Each number in a sequence is called a **term**.

Key point

Sequences where the numbers **increase** are **ascending** sequences.

Sequences where the numbers **decrease** are **descending** sequences.

A sequence that carries on for ever is **infinite**.

A sequence with a fixed number of terms or a 'last term' is **finite**.

Key point

You can describe an arithmetic sequence using the first term and the **common difference** (the difference between terms). For the sequence 14, 11, 8, 5, 2, ... , the first term is 14 and the common difference is -3 .

Key point

The **term-to-term rule** tells you how to get from one term to the next in a sequence. It can use adding, subtracting, multiplying and dividing.

Key point

When you know the first term and the term-to-term rule, you can work out all the terms in the sequence.

Worked example

a Complete this table of values for the equation $y = 2x + 4$.

x	1	2	3	4	5
y	6	8	10	12	14

To find each missing y -coordinate multiply the x -value by 2 and then add 4.

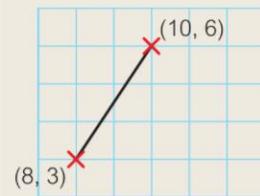
b Write down five coordinate pairs from the table.

(1, 6), (2, 8), (3, 10), (4, 12), (5, 14)

When $x = 1$, $y = 6$, giving (1, 6).

Worked example

Work out the midpoint of this line segment.



$$(8 + 10) \div 2 = 9$$

$$(3 + 6) \div 2 = 4.5$$

$$\text{midpoint} = (9, 4.5)$$

Worked example

a Write down the next three terms in this sequence.

4, 7, 10, ...

4, 7, 10, 13, 16, 19

Work out how to get from one term to the next. Continue the pattern for the next three terms.



b Write down the first term and the term-to-term rule.

First term is 4.

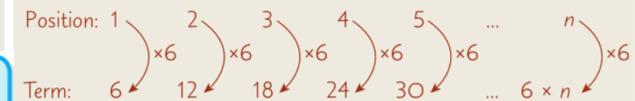
Term-to-term rule is 'add 3'.

Write down the first term and the rule to get from one term to the next.

Worked example

Work out the n th term of this sequence.

6, 12, 18, 24, 30, ...



$6n$

$$6 \times n = 6n$$

Key point

You use algebra to write the position-to-term rule.

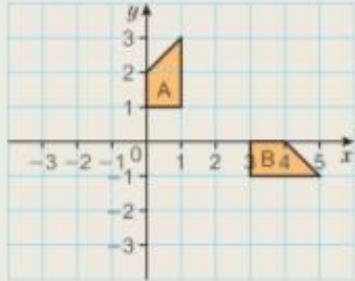
It is called the **n th term** because it tells you how to work out the term at position n (any position).

Key point

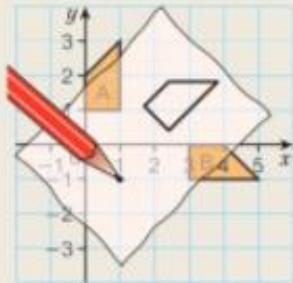
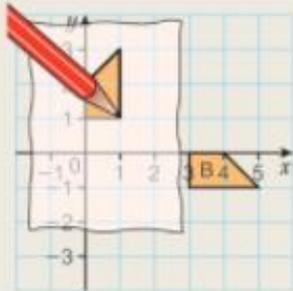
An **arithmetic sequence** goes up or down in equal steps. For example, the sequence 14, 11, 8, 5, 2, ... goes down in steps of 3.

Unit 10:

Worked example



Describe the rotation that takes A to B



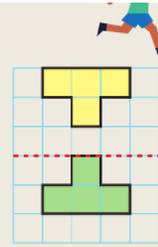
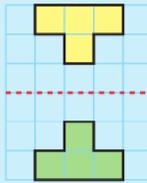
Rotation clockwise through 90° about $(1, -1)$.

Worked example

Is the green shape a correct reflection of the yellow shape in the mirror line? Give a reason for your answer.

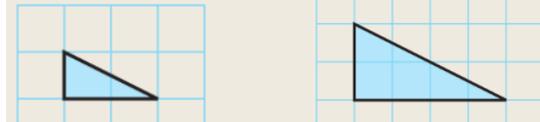
No. The green shape should be one square from the mirror line, not on the mirror line.

This is a correct reflection.



Worked example

Enlarge this shape by scale factor 2



Multiply each side by 2.

Draw the height and base of the new triangle first, then join to make the third side.

Key point

An **enlargement** is a type of transformation. You multiply all the side lengths of a shape by the same number.

The number that the side lengths are multiplied by is called the **scale factor**.

Key point

When a shape is transformed by a translation, rotation or reflection, the image has exactly the same side lengths and angles as the object.

Key point

The original shape is called the **object**. The enlarged shape is called the **image**.

Key point

Shapes are **congruent** if they are the same shape and size. For example, these shapes are all congruent.



Key point

In congruent shapes, **corresponding sides** and **corresponding angles** are equal.

Key point

If a 3D shape has reflection symmetry, the mirror line is called a **plane of symmetry**.

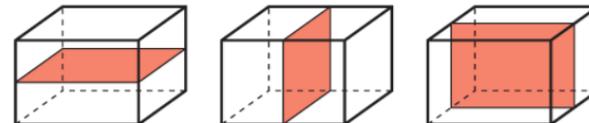
Key point

If you fold a shape along a **line of symmetry**, both halves fit onto each other perfectly.

Key point

When a shape is rotated through 360° , the **order of rotational symmetry** is the number of times it looks exactly the same as it did at the start.

This cuboid has reflection symmetry. The three **planes of symmetry** are shaded red in the diagrams.



Overview

In this term, learners will be revising the whole years worth of topics in preparation for the end of year assessment.

Key Topics:

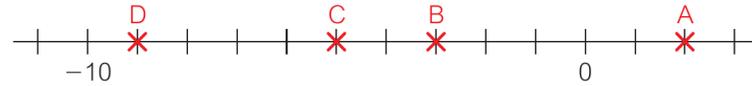
1. Analysing and Displaying Data
2. Number Skills
3. Expressions, Functions & Formulae
4. Decimals & Measures
5. Fractions
6. Probability
7. Ratio & Proportion
8. Lines & Angles
9. Sequences & Graphs
10. Transformations

Websites and further reading

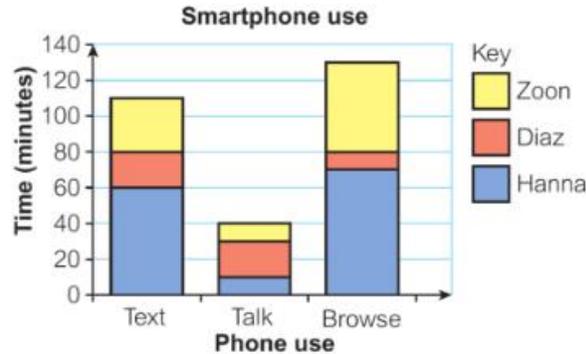
- Pearson Active Learn:
<http://pearsonactivelearn.com>
- Maths Watch: <http://mathswatch.co.uk/>
- BBC Bitesize:
<http://www.bbc.co.uk/education/subjects/zqhs34j>
- Numeracy and Foundation level practice questions and answers:
<https://corbettmaths.com/5-a-day/gcse1/>
- Maths quiz:
<http://www.educationquizzes.com/ks3/maths/>
- KS3 online tests:
<http://www.romsey.hants.sch.uk/maths/ks3online/etests.htm>

Units 1-2:

Write the numbers marked with crosses on the number line.



The chart shows the times three students spent texting, talking and browsing on their smartphones one day.



- a How long did Zoon spend sending text messages?
- b Who spent the least time browsing?
- c Copy and complete the table.

	Text	Talk	Browse
Hanna			
Diaz			
Zoon			

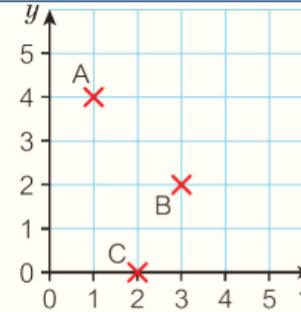
- d How many minutes did Zoon spend texting, talking and browsing altogether?
- e Which two students spent the same amount of time talking?

Use the grid method to work out

- a 142×3
- b 293×6

Work out these subtractions. Part b h

- a $45.9 - 32.7$
- b $8.71 - 6.38$



Use approximation to work out an estimate for each of these

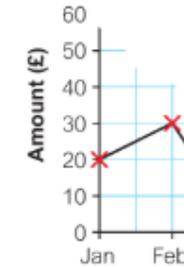
- a 168×4
- b 219×5
- c 372×8

- a Write the coordinates of points A, B and C.
- b Copy the grid. Plot the points (5, 1), (3, 3), (0, 2) and (4, 0).

The table shows the amount of money in a charity box at the beginning of each month.

Month	Jan	Feb	Mar	Apr	May	Jun
Amount (£)	20	30	0	15	15	50

- a Copy and complete the line graph for the data.
- b How much was in the charity box at the beginning of February?
- c When was the charity box empty?
- d When was there £50 in the charity box?



Discussion What happened between March and June?

Some of the numbers below have been placed into the wrong boxes.

Factors of 24	
4	14
6	16

Multiples of 7	
25	7
28	1

Square numbers	
12	9
21	4

Each box contains two incorrect numbers.

Which numbers are incorrect? Which box should they be in?

Units 2 - 4:

Simplify

a $y + y$

b $z + z + z + z$

c $b + b + b$

d $3c + 2c$

e $9a - 3a$

f $4t + 5t - 2t$

g $8r - r + 3r$

h $h + 7h - 3h - 4h$

John has £2.70, Richard has £12.84 and Lucy has £8.50.

a Round each amount to the nearest whole pound (£).**b** Use your answers to part **a** to estimate how much John, Richard and Lucy have altogether.

Multiply out the brackets.

a $3(x + 2)$

b $4(5 + y)$

c $2(3c + 4)$

d $4(4 + 3p)$

A formula used in science for a rough conversion from weight (W) to mass (M) is

$$M = W \div 10$$

Work out the value of M when

a $W = 60$

b $W = 500$

c $W = 85$

Copy and complete.

a $4.6\text{ m} = \square\text{ cm}$

c $5.25\text{ km} = \square\text{ m}$

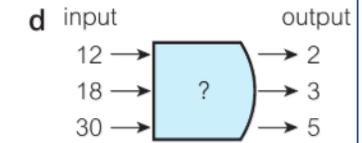
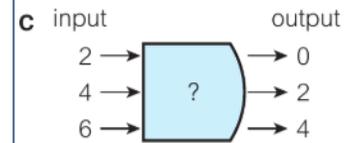
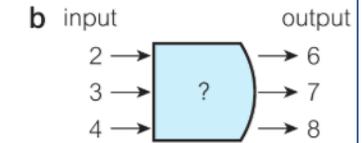
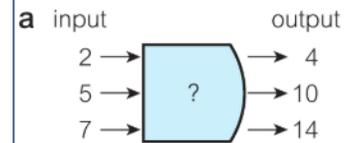
e $0.35\text{ kg} = \square\text{ g}$

b $6.5\text{ l} = \square\text{ ml}$

d $4.8\text{ cm} = \square\text{ mm}$

f $5.8\text{ m} = \square\text{ cm}$

Describe the function used by each function machine.



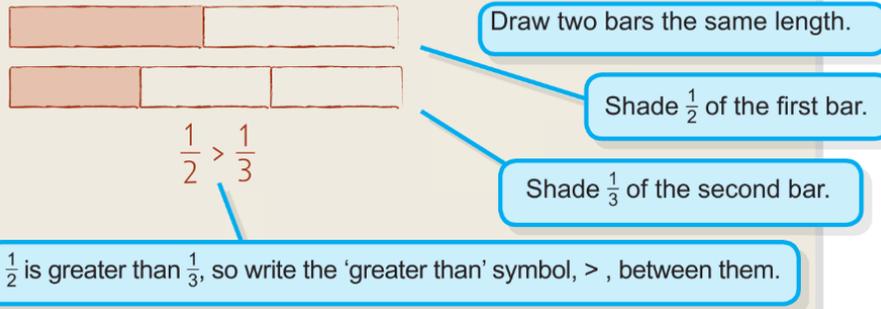
Work out

a 20% of £12**b** 30% of 45 kg**c** 40% of 24 litres**d** 70% of 9t

Unit 5:

Worked example

Write the correct sign, > or <, between these fractions: $\frac{1}{2} \dots \frac{1}{3}$.



Write the correct sign, > or <, between each of these pairs of fractions.

a $\frac{3}{4} \dots \frac{1}{4}$

b $\frac{4}{5} \dots \frac{2}{5}$

Key point

You can write fractions as decimals.

Three important examples are

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

You can convert a decimal to a fraction by looking at the place value.

Key point

When you work out a fraction of a quantity, you divide the quantity by the denominator, and then multiply by the numerator.

Work out

a 10% of 80 kg

c 10% of 1500 m

e 20% of £50

g 40% of 350 g

Key point

An **improper fraction** has a numerator that is bigger than its denominator, for example $\frac{4}{3}$.

A **mixed number** has a whole number part and a fraction part, for example $1\frac{1}{3}$.

b 10% of 150 ml

d 10% of £45

f 80% of 20 t

h 30% of 25 km

Convert these percentages to fractions. Write each fraction in its simplest form. The first and third parts have been started for you.

a $27\% = \frac{\square}{100}$

b 99%

c $10\% = \frac{\square}{100} = \frac{\square}{10}$

d 30%

Key point

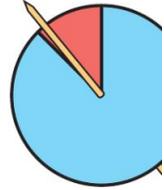
To convert a percentage to a decimal, you divide by 100. For example, $45\% = 45 \div 100 = 0.45$.

To convert a decimal to a percentage, you multiply by 100. For example, $0.08 = 0.08 \times 100 = 8\%$.

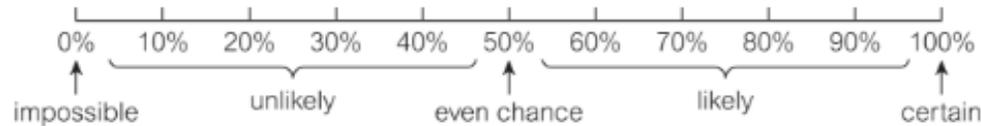
Units 6-7:

Here is a fair spinner.

- a** Which colour is the spinner likely to land on?
b Which colour is the spinner unlikely to land on?



- a** Copy this percentage probability scale.



Mark on it the letter of each of these events.

- A** There is a 50% chance that the first student through the school gate tomorrow will be female.
B A teacher says there is a 10% probability that the school will be closed due to snow next week.
C There is a 100% probability that the school will close later today.
D If you cheat in a maths exam, the probability of being caught is 90%.
- b** Describe each of the events in part **a** using probability words.

Share these amounts between Andy and Bern in the ratios given

- a** £12 in the ratio 1 : 3
b £15 in the ratio 1 : 2
c £20 in the ratio 4 : 1

- a** Copy and colour these circles to show the ratios

i 5 : 7 **ii** 1 : 5 **iii** 3 : 9 **iv** 1 : 3.



Write each ratio in its simplest form.

- a** 2 : 4
b 6 : 3
c 3 : 12
d 30 : 5
e 6 : 8
f 6 : 27
g 16 : 24

This four-sided dice has a shape drawn on each side.



- a** How many possible outcomes are there?
b The dice is rolled once. How many successful outcomes are there for each event?
A The dice lands on a triangle.
B The dice lands on a circle.
C The dice lands on a shape with straight sides.
c Write the probability of each event in part **b**.

Units 8 - 9:

Sanchez's teacher secretly put 10 cubes in a bag. Some were blue, some yellow and some black.

Sanchez took one out and recorded its colour in the tally chart below. Then he put the cube back into the bag. He repeated this 20 times.

Colour	Tally	Frequency	Experimental probability
Blue		13	$\frac{13}{20}$
Yellow			
Black			
	Total frequency		

- a Complete the Frequency column.
- b Calculate the total frequency.
- c Calculate the experimental probability of picking each colour.

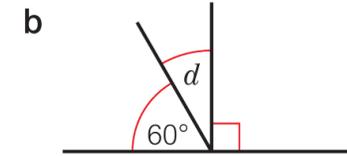
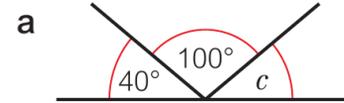
This question is about the function $y = 4x$.

- a Copy and complete this table with the value of y for each value of x .

x	0	1	2	3	4
y	0	4			

- b Write down the five pairs of coordinates generated by the table.
- c Draw a grid with the x - and y -axes from 0 to 16. Plot the coordinates on the grid.
- d Join the points with a straight line and label the line $y = 4x$.

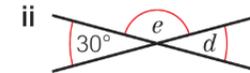
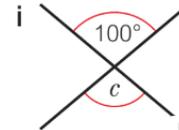
Calculate the size of each unknown angle.



- a Complete the working to find the sizes of angles a and b .

angle $a = \square$ Vertically opposite angles are _____.
angle $b = 180^\circ - \square^\circ = \square^\circ$ Angles on a _____ add up to \square° .

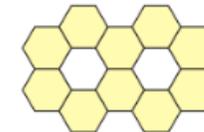
- b Work out the size of each unknown angle. Write down the reasons.



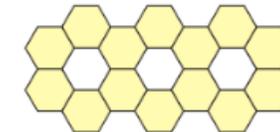
Here is a sequence of patterns made from yellow hexagons.



Stage 1



Stage 2



Stage 3

- a Write down the terms of the number sequence. This is an arithmetic sequence.
- b How many yellow hexagons are added between Stage 1 and Stage 2?
- c How many yellow hexagons are added between Stage 2 and Stage 3?
- d How many hexagons will be in Stage 4?
- e Reasoning What method did you use to work this out? What different method could you have used?
- f The number sequence begins 6, 10, 14, ... Write down the next five terms.

Unit 10:

Match the correct order of rotational symmetry card to each of these shapes.

A  Order 4
 B  Order 3

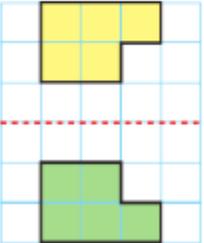
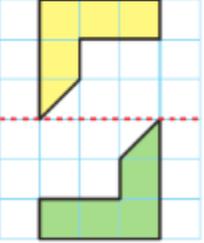
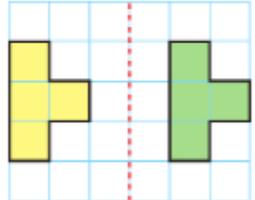
Order 5
 D  Order 1
 C 

E  Order 2

Reasoning In each diagram, decide whether the green shape is a correct **reflection** of the yellow shape in the **mirror line**.

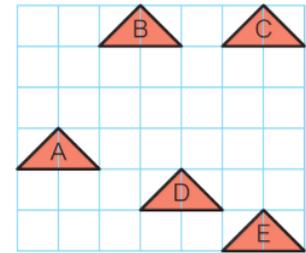
If the reflection isn't correct, give a reason why.

Then copy the shape and draw the correct reflection.

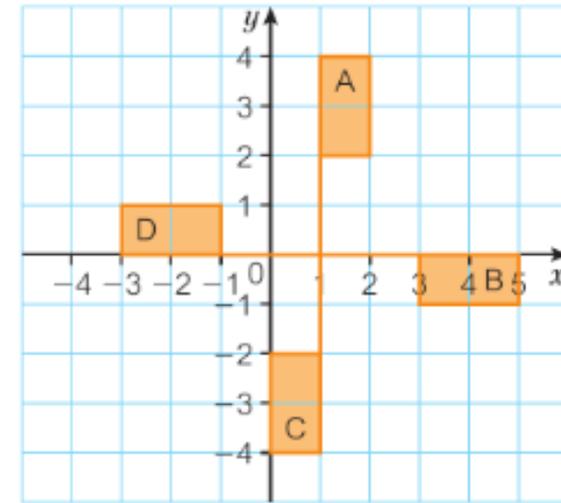
a 
 b 
 c 

The grid shows triangles A to E.
Describe the translation that takes

- a A to B
- b B to C
- c C to D
- d D to E
- e E to A
- f E to C



The grid shows four flags.



Describe these **rotations**. The first one is done for you.

- a A onto B
- b B onto A
- c D onto B
- d C onto D
- e A onto C
- f C onto A

90° rotation clockwise about (1, 0)

Key Terms – Can you add the definitions (meanings)?

Fraction: _____

Reflect: _____

Rotate: _____

Translate: _____

Websites and further reading

- Pearson Active Learn: <http://pearsonactivelearn.com>
- Maths Watch: <http://mathswatch.co.uk/>
- BBC Bitesize: <http://www.bbc.co.uk/education/subjects/zqhs34j>
- Numeracy and Foundation level practice questions and answers:
<https://corbettmaths.com/5-a-day/gcse1/>

Unit 9 - Key skills:

Key point

A **fraction** is a part of a whole.

Key point

An **improper fraction** is a fraction in which the numerator is greater than the denominator.

A **mixed number** has a whole number part and a fraction part.

An improper fraction can be written as a mixed number.

Key point

You can write percentages as fractions or decimals.

Worked example

Find $\frac{1}{3}$ of 18



$$18 \div 3 = 6$$

How many in each $\frac{1}{3}$?

Worked example

Simplify $\frac{5}{10}$

$$\frac{5}{10} = \frac{1}{2}$$

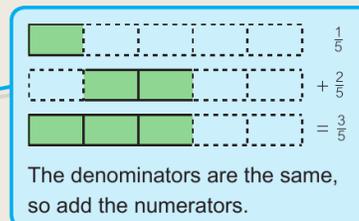
÷5

Both 5 and 10 can be divided by 5, so divide the numerator and denominator by 5.

Worked example

Work out $\frac{1}{5} + \frac{2}{5}$

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



Key point

Per cent means 'out of 100'. '%' stands for 'per cent'.

Key point

The number above the line in a fraction is the **numerator**.

The number below the line is the **denominator**.

$$\frac{1}{2}$$

← numerator
← denominator

Key point

Fractions with a **common denominator** have the same denominator. (They have that denominator 'in common'.)

Key point

When the numerator and denominator are the same, the fraction equals one whole.

Key point

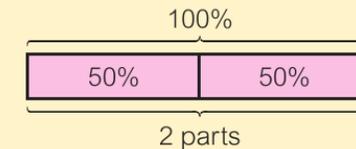
Multiplying or dividing the numerator and denominator by the same number gives an equivalent fraction. When the numerator and denominator are as small as possible, the fraction is **simplified**. For example

$$\frac{2}{6} = \frac{1}{3}$$

÷2

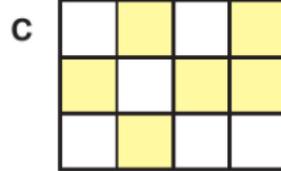
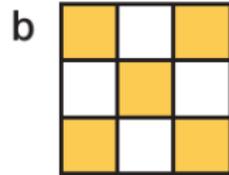
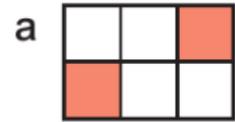
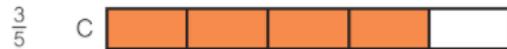
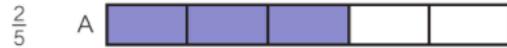
Key point

50% is the same as $\frac{1}{2}$. To find 50% of an amount you divide by 2.



Unit 9 - Test Your Understanding

What fraction of each shape is shaded?

**a** Match each **fraction** to the correct shaded bar.**b** Now write the fractions $\frac{2}{5}$, $\frac{4}{5}$ and $\frac{3}{5}$ in order, smallest first.

Work out

a $\frac{1}{3}$ of 30

b $\frac{1}{2}$ of 10

c $\frac{1}{5}$ of 25

d $\frac{1}{7}$ of 14

e $\frac{1}{9}$ of 27

f $\frac{1}{4}$ of 24

g $\frac{1}{6}$ of 18

h $\frac{1}{10}$ of 50

Work out

a $\frac{1}{3} + \frac{1}{3}$

b $\frac{2}{7} + \frac{1}{7}$

c $\frac{2}{5} + \frac{2}{5}$

d $\frac{1}{9} + \frac{3}{9}$

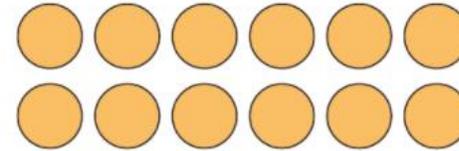
e $\frac{2}{10} + \frac{1}{10}$

f $\frac{4}{11} + \frac{3}{11}$

g $\frac{5}{12} + \frac{2}{12}$

h $\frac{1}{15} + \frac{7}{15}$

A game for 2 to 4 players has 12 counters.

How many counters does each player get when there are
a 2 players **b** 3 players **c** 4 players?

Copy and complete

$$\mathbf{a} \quad \frac{2}{4} = \frac{\square}{\square}$$

$\div 2$

 $\div \square$

b $\frac{6}{10} = \frac{\square}{\square}$

c $\frac{14}{20} = \frac{\square}{\square}$

Unit 10 - Key Skills:

Key point

A **reflection** is a type of **transformation**.

When a shape or object is reflected in a mirror the shape 'flips' over.

Key point

Turning a shape through an angle is called a **rotation**. A rotation is a type of transformation.

Worked example

Rotate this shape through a $\frac{3}{4}$ turn clockwise.

Trace the shape.

Rotate the tracing paper through a $\frac{3}{4}$ turn clockwise.

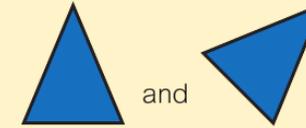
Draw the shape in its new position.

Key point

All points on an object are the same distance from a **mirror line** as the points on the image, but on the opposite side.

Key point

Congruent shapes are exactly the same size and shape, for example



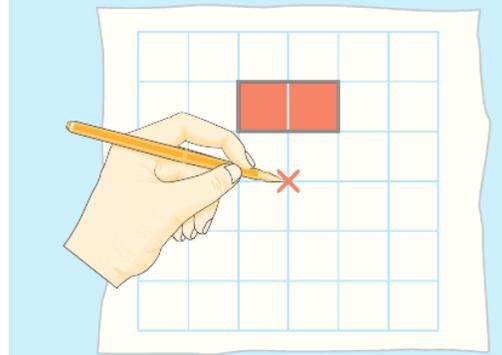
Worked example

Translate the triangle 5 squares left and 3 squares down.

Choose one of the corners and translate it 5 left, 3 down.

Repeat for the other corners.

Use tracing paper to help you.



Key point

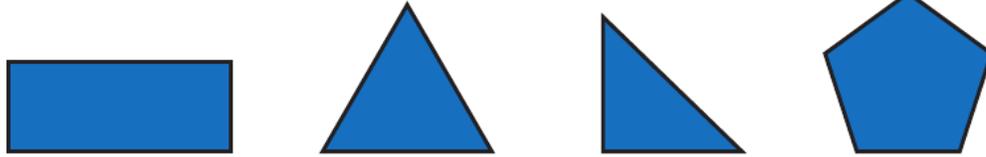
A **translation** is a type of **transformation**.

A translation moves a shape across a surface.

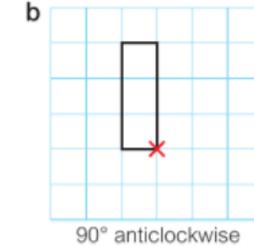
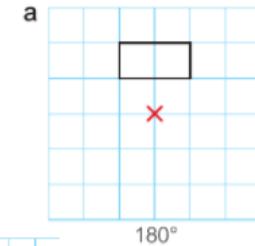
Describe a translation as a movement left or right, then up or down.

Unit 10 - Test Your Understanding

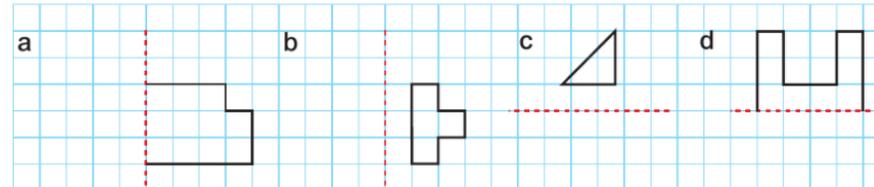
How many lines of symmetry does each shape have?



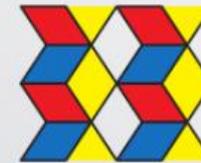
Copy each shape onto squared paper. Rotate it through the angle given about the **centre of rotation** marked **x**.



Copy and complete each picture to make an accurate reflection in the mirror line.



Here is a wallpaper for a mobile phone.

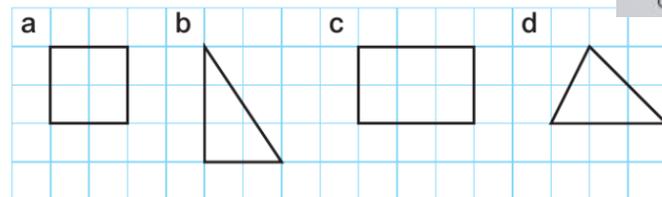


- a What 2D shape has the designer used?
- b Measure the sides and angles in each shape. Are all the shapes congruent?
- c What type of transformation takes the red shape to the blue one?
- d What type of transformation takes the yellow shape to the white one?

Copy each shape on to squared paper.

Translate the shape

- a 4 right
- b 2 up
- c 2 right 3 up
- d 3 left 6 down.



Overview

In this term, learners will be revising the whole years worth of topics in preparation for the end of year assessment.

Key Topics:

1. Analysing & Displaying Data
2. Calculating
3. Expressions, Functions & Formulae
4. Graphs
5. Factors and Multiples
6. Decimals & Measures
7. Angles & Lines
8. Measuring & Shapes
9. Fractions, Decimals & Percentages
10. Transformations

Websites and further reading

- Pearson Active Learn: <http://pearsonactivelearn.com>
- Maths Watch: <http://mathswatch.co.uk/>
- BBC Bitesize:
<http://www.bbc.co.uk/education/subjects/zqhs34j>
- Numeracy and Foundation level practice questions and answers: <https://corbettmaths.com/5-a-day/gcse1/>
- Maths quiz:
<http://www.educationquizzes.com/ks3/maths/>
- KS3 online tests:
<http://www.romsey.hants.sch.uk/maths/ks3onlinetests.htm>

Units 1 - 2:

Here are some coloured buttons.

a Copy the table.

Colour	Number of buttons
red	
blue	
green	
black	



b Count each colour. Write the number in the table.

Work out

- a $64 + 28$
- b $25 + 37$
- c $46 + 8$
- d $83 + 72$
- e $26 + 91$
- f $37 + 84$

Match the divisions that have the same answer.

- $27 \div 3$ $32 \div 8$ $42 \div 6$ $27 \div 6$
- $36 \div 4$ $35 \div 5$ $24 \div 6$

Write these numbers in order, smallest first.

- a 5, -3, 8, 9, -4, 7, 0
- b -4, -7, -8, 2, -3, 6
- c -5, 5, -3, 3, 2, -4, 1

Some Year 7 students counted the number of items in their pencil cases.

4, 2, 11, 5, 8, 13, 6

- a Which is the smallest value?
- b Which is the largest value?
- c Work out the range.

Which of the numbers in the box are square numbers?

14	25	8	18	10
6	4	9	81	36

Work out

- a $4 \overline{)8}$ b $4 \overline{)84}$ c $4 \overline{)848}$
- d $2 \overline{)468}$ e $369 \div 3$ f $684 \div 2$

The formula to work out the number of nails you need to shoe a horse is
 number of nails = $7 \times$ number of horse shoes

Complete the workings to find the number of nails needed for

- a 4 horse shoes b 8 horse shoes
 number of nails = $7 \times 4 = \square$ number of nails = $7 \times 8 = \square$
- c 12 horse shoes
 number of nails = $7 \times \square = \square$

Use rounding to estimate the answer to

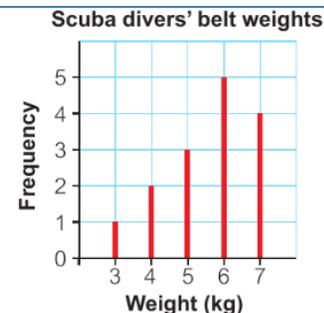
- a 79×3 b 4×78 c 27×3 d 5×39

Look at these values. 12, 4, 6, 0, 8

- a Use your calculator to add up the values.
- b How many values are there?
- c Work out the mean.

The bar-line chart shows the belt weights of some scuba divers.

- a How many belts weigh 7 kg?
- b Which belt weight is used by 2 divers?
- c Write down the **modal weight**.



Units 3-5:

Work out the outputs of these function machines.



The formula to work out the number of nails you need to shoe a horse is
 number of nails = $7 \times$ number of horse shoes

Complete the workings to find the number of nails needed for

- a** 4 horse shoes **b** 8 horse shoes
 number of nails = $7 \times 4 = \square$ number of nails = $7 \times 8 = \square$
- c** 12 horse shoes
 number of nails = $7 \times \square = \square$

Match the story to the calculation.

- A** Joe has 3 sweets. He gets 2 more. i $x - 2$ ii $x + 3$
B Penny has 3 texts. She deletes 1.
C Suha has x sweets. She gets 3 more. iii $3 - 1$ iv $3 + 2$
D Kunal has x texts. He deletes 2.

These numbers are multiples of 10.

400 10 230 1760 50 610

- a** What is the same about them?
b Which of these numbers are multiples of 10?
 403 60 6 730 500 7106

3 Copy and complete the table of values for $y = x + 2$.

x	0	1	2	3
y	2			

When x is 0, y is 2.

When x is 1, y is ...

Simplify

- a** $b + b$
b $b + b + b$
c $4b + 3b$
d $5b + b$
e $3b + b + 2b$

Use these sets of multiples to help you with part **a**.

First 10 multiples of 3

15	24
21	9
12	3
30	27
6	18

First 10 multiples of 4

28	20
8	4
32	12
40	36
16	24

First 10 multiples of 5

5	20	10
50	40	30
15	35	
45	25	

This Venn diagram shows the common multiples of 3 and 4.

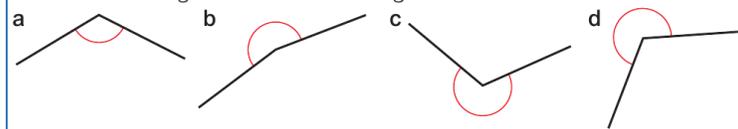
- a** Draw Venn diagrams to show the common multiples of
i 3 and 5 **ii** 4 and 5.

Units 6-8:

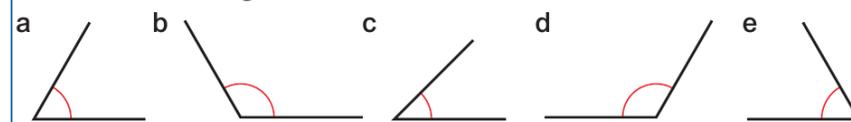
Round these numbers to the nearest whole number.

- a 2.7
- b 3.2
- c 5.5
- d 8.13
- e 12.45

One of these angles is *not* a reflex angle. Which one?



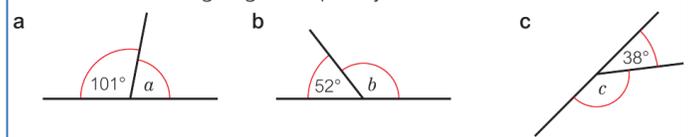
Which of these angles are acute?



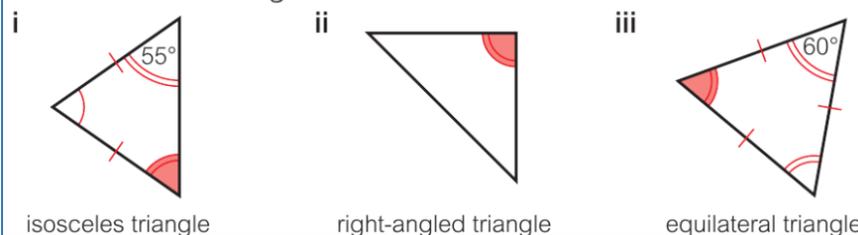
Work out

- a $3.5 + 2.4$
- b $2.2 + 0.6$
- c $1.8 + 5.3$
- d $3.5 + 3.8$

Work out the missing angles. Explain your reason.



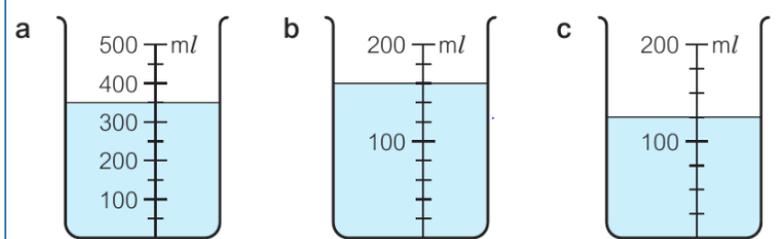
Work out the red angles.



Work out these multiplications.

- a 3×2.3
- b 8×4.1

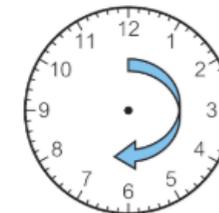
Write down the amount of water.



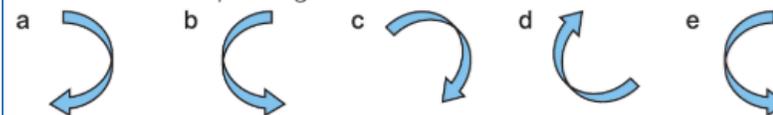
Write each set of measurements in order, from smallest to largest.

- a 78 mm 6.9 cm 96 mm 7 cm
- b 12.3 kg 1190 g 1200 g 1.02 kg

The hands on a clock move clockwise.



Are these arrows pointing clockwise or anticlockwise?



These are the answers to money calculations.

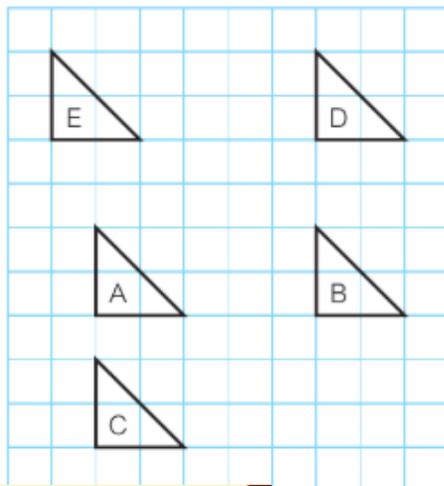
Write them in £ . p.

- a 0.5
- b 0.3
- c 6.5
- d 1.3
- e 2.7

Units 8-10:

Describe the translation that moves shape

- a A to B
- b A to C
- c C to D
- d B to E.



Work out

a $\frac{1}{12} + \frac{4}{12}$

b $\frac{4}{7} + \frac{2}{7}$

c $\frac{4}{9} + \frac{1}{9}$

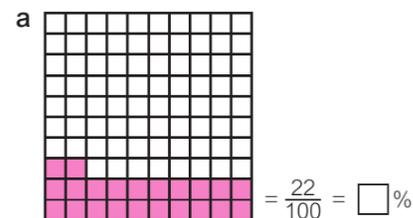
d $\frac{3}{11} + \frac{5}{11}$

Key point

Congruent shapes are exactly the same size and shape, for example



Copy and complete these equivalent fractions and percentages.



Work out

a $\frac{1}{3}$ of 30

b $\frac{1}{2}$ of 10

c $\frac{1}{5}$ of 25

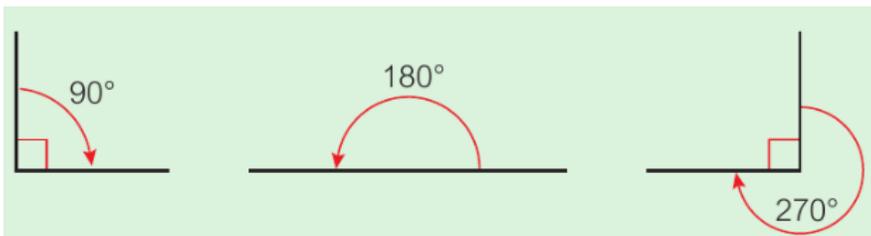
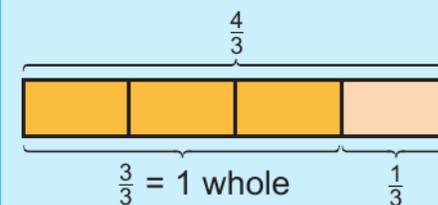
d $\frac{1}{7}$ of 14

Worked example

Write the improper fraction $\frac{4}{3}$ as a mixed number.

$\frac{4}{3} = 1\frac{1}{3}$

3 thirds make 1 whole.
There is 1 third left over.



Overview

In this term, learners will be studying up to three units which will include scale drawings and measures, and graphs.

Key Terms:**Unit 9:**

Maps

Scales

Bearing

Congruent

Similar

Geometry

Ratio

Angle

Unit 10:

Equation

Straight Line

Graph

Parallel

Perpendicular

Gradient

Intercept

 $y = mx + c$

Inverse

Product

Function

Websites and further reading

- Pearson Active Learn: <http://pearsonactivelearn.com>
- Maths Watch: <http://mathswatch.co.uk/>
- BBC Bitesize: <http://www.bbc.co.uk/education/subjects/zqhs34j>
- Numeracy and Foundation level practice questions and answers: <https://corbettmaths.com/5-a-day/gcse1/>
- Maths quiz: <http://www.educationquizzes.com/ks3/maths/>
- KS3 online tests: <http://www.romsey.hants.sch.uk/maths/ks3onlinetests.htm>

Key skills:**Unit 9** Scale drawings and measures

- 9.1 Maps and scales
- 9.2 Bearings
- 9.3 Scales and ratio
- 9.4 Congruent and similar shapes
- 9.5 Solving geometry problems

Unit 10 Graphs

- 10.1 Plotting linear graphs
- 10.2 The gradient
- 10.3 $y = mx + c$
- 10.4 Parallel and perpendicular lines
- 10.5 Inverse functions
- 10.6 STEM: Non-linear graphs

Unit 9:

Key point

A **bearing** is an angle in degrees, clockwise from north.

A bearing is always written using three digits.



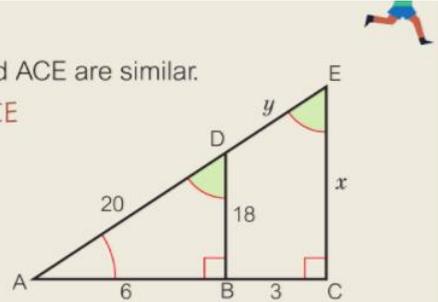
This bearing is 025°.

Worked example

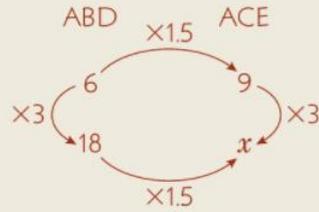
a Explain why triangles ABD and ACE are similar.

Triangle ABD	Triangle ACE
$\angle A$	$\angle A$
$\angle B = 90^\circ$	$\angle C = 90^\circ$
$\angle D = \angle E$ (corresponding angles)	

The triangles have the same angles (AAA).



b Work out length x .

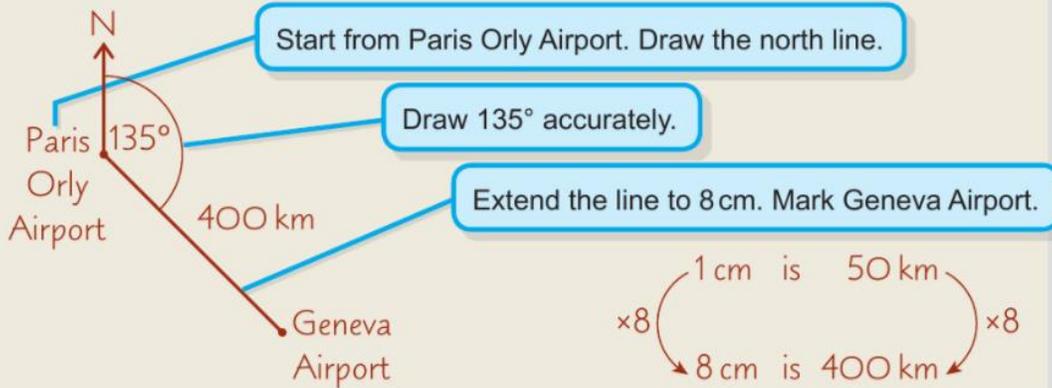


9×3 is easier to work out than 18×1.5 , but they give the same answer.

$$x = 9 \times 3 = 27$$

Worked example

Geneva Airport is 400 km from Paris Orly Airport on a bearing of 135° . Draw this bearing accurately using a scale of 1 cm to 50 km.

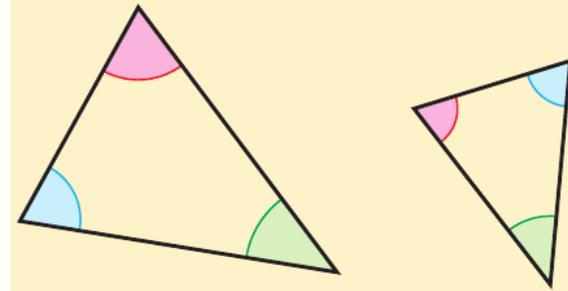


Key point

The **scale** on a map is given as a ratio $1:n$. For example, $1:25\,000$ means 1 cm on the map represents 25 000 cm in real life.

Key point

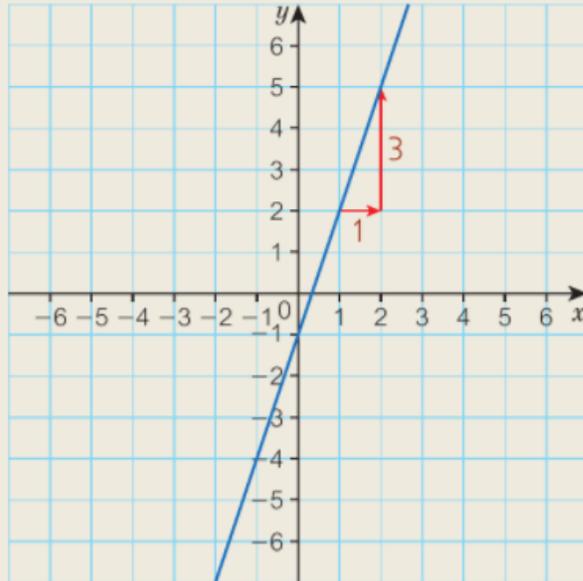
To show that two shapes are similar, show that corresponding angles are equal, or find the scale factor for corresponding sides.



Unit 10:

Worked example

Find the **gradient** of the line.



Gradient = 3

Choose a point on the line.

Draw a horizontal line 1 unit in the x -direction.

Draw a vertical line to the graph line.

When the x -value increases by 1, the y -value increases by 3.

Key point

The graph of an inverse function is a reflection of the original function in the line $y = x$.

Worked example

Plot the graph of $2y + 3x = 8$.

When $x = 0$:

$$2y + 3 \times 0 = 8$$

$$2y = 8$$

$$y = 4$$

When $y = 0$:

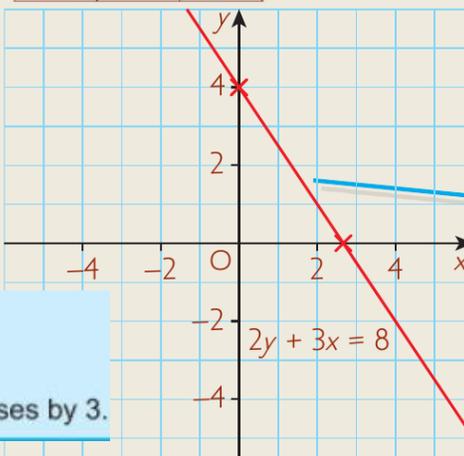
$$2 \times 0 + 3x = 8$$

$$3x = 8$$

$$x = \frac{8}{3}$$

$$x = 2\frac{2}{3}$$

x	0	$2\frac{2}{3}$
y	4	0



To find the **y -intercept**, substitute $x = 0$ into the equation. Solve to find the value of y .

To find the **x -intercept**, substitute $y = 0$ into the equation. Solve to find the value of x .

Draw a table of values with $x = 0$ and $y = 0$.

Plot the points and join them with a straight line. Label the line with its equation.

Key point

To find the gradient of a line calculate $\frac{\text{change in } y}{\text{change in } x}$

Key point

The steepness of the graph is called the **gradient**.

Unit 10:**Key point**

The ***y*-intercept** is where a line crosses the *y*-axis.

To find the *y*-intercept of a graph, find the *y*-coordinate where $x = 0$.

To find the *x*-intercept of a graph, find the *x*-coordinate where $y = 0$.

Key point

The equation of a straight-line graph can always be written in the form $y = mx + c$. *m* is the gradient and *c* is the *y*-intercept.

Key point

An **inverse function** reverses the effect of the original **function**.

Worked example

Find the equation of a straight line perpendicular to $y = 3x + 2$, which goes through the point (6, 0).

$$y = -\frac{1}{3}x + c$$

$$0 = -\frac{1}{3} \times 6 + c$$

$$0 = -2 + c$$

$$2 = c$$

The equation is:

$$y = -\frac{1}{3}x + 2$$

Work out the gradient of the perpendicular line. Substitute it for *m* in $y = mx + c$.

Substitute $x = 6$, $y = 0$ into the equation.

Solve to find *c*.

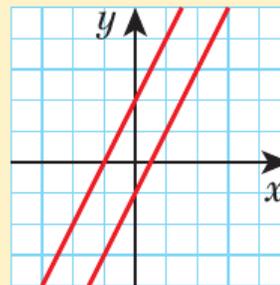
Rewrite the equation with the values *m* and *c*.

Key point

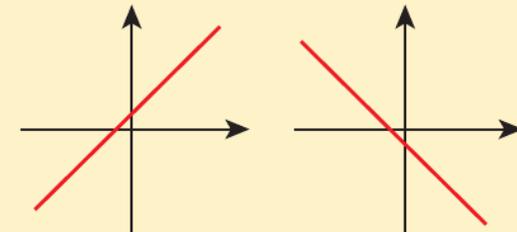
When two lines are **perpendicular** the product of their gradients is -1 .

Key point

Lines that are **parallel** have the same gradient.

**Key point**

To find the gradient, work out how many units the graph goes up for every 1 unit across.



Gradients are positive (/, uphill) or negative (\, downhill).

The larger the value, the steeper the gradient.

Overview

In this term, learners will be revising the whole years worth of topics in preparation for the end of year assessment.

Key Topics:

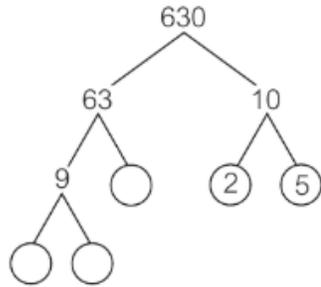
1. Factors & Powers
2. Working with Powers
3. 2D Shapes and 3D Solids
4. Real Life Graphs
5. Transformations
6. Fractions, Decimals & Percentages
7. Constructions & Loci
8. Probability
9. Scale Drawings & Measures
10. Graphs

Websites and further reading

- Pearson Active Learn: <http://pearsonactivelearn.com>
- Maths Watch: <http://mathswatch.co.uk/>
- BBC Bitesize:
<http://www.bbc.co.uk/education/subjects/zqhs34j>
- Numeracy and Foundation level practice questions and answers: <https://corbettmaths.com/5-a-day/gcse1/>
- Maths quiz: <http://www.educationquizzes.com/ks3/maths/>
- KS3 online tests:
<http://www.romsey.hants.sch.uk/maths/ks3onlinetests.htm>

Units 1 - 2:

Copy and complete the factor tree for the number 630 until you end up with just prime factors.



Use index notation to write 630 as the product of its prime factors.

Work out

a i $\frac{2^8}{2^5}$

ii $\frac{3 \times 2^8}{2^5}$

b i $\frac{5^6}{5^4}$

ii $\frac{5^6 \times 4}{5^4}$

Factorise completely

a $2x^2 + 8x^3$

b $36d - 30d^4$

c $6q^3 - 14q^2$

d $27u^3 + 36u^2$

e $5b^2 - 50b$

f $36mn + 8m^2n^2$

Work out the HCF of each pair of numbers.

a 32 and 36

b 45 and 72

c 132 and 180

Find the value of each expression when

$x = -2$, $y = -4$ and $z = 3$.

a $y^2(5z - 3x^2)$

b $z(xy + x^2)$

c $z^2 - yz + xz$

d $3(z - x)^2 - 5y$

Expand and simplify

a $3(x + 2) + 5(x + 1)$

b $4(a + 3) + 2(a - 1)$

c $x(x - 1) + x(x + 8)$

d $3a(a + 2) - 5a(a - 1)$

Solve

a $6(x + 5) = 44 - 2(4 - 2x)$

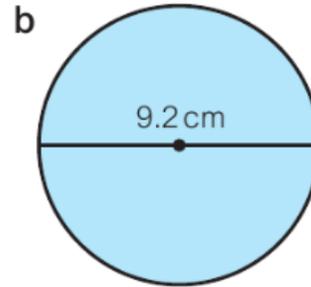
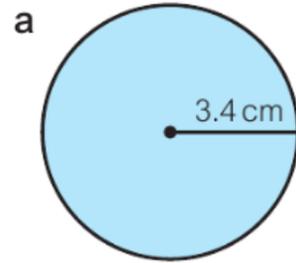
b $2(3x - 13) = 40 - 3(x + 4)$

c $7(x + 1) = 8x + 7 - 2(3x - 5)$

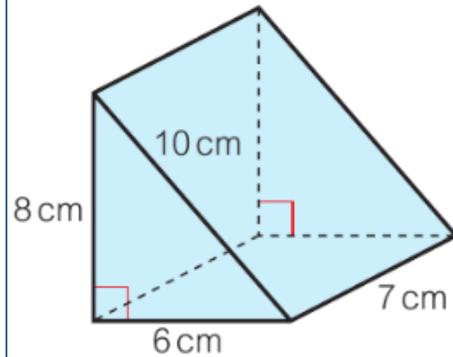
d $4(3 + 5x) = 16x + 56 - 4(2x - 1)$

Unit 3:

Work out the area of each circle.
Round your answer to 1 decimal place.



Work out the surface area of this triangular prism.



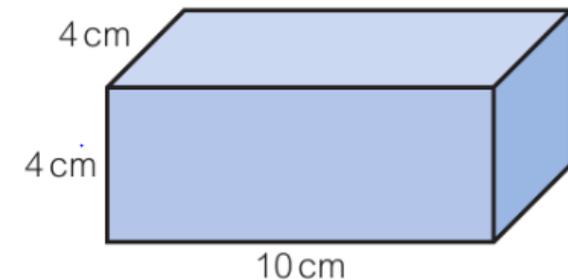
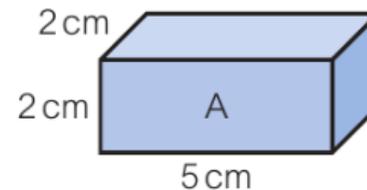
A cuboid is enlarged by scale factor 2.

a Work out

- i the volume of the original cuboid
- ii the volume of the enlarged cuboid.

b Find the missing number.

$$\text{Enlarged volume} = \text{original volume} \times \square$$



Convert

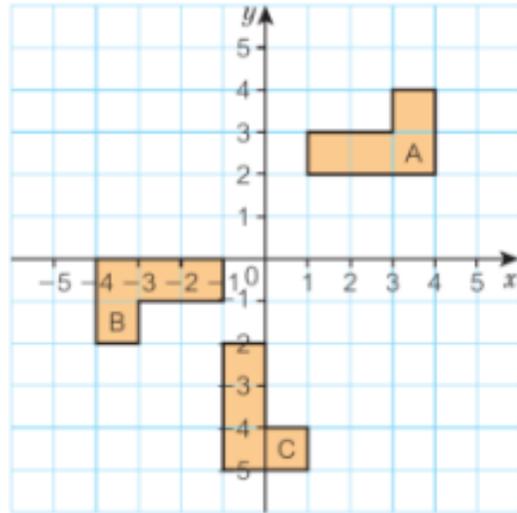
- a 6.5 Tm to km
- b 0.014 m to nm
- c 50 000 nm to mm
- d 2200 km to Mm
- e 0.000 0006 Gm to mm

Units 4 - 5:

Describe the rotation that takes shape A to

a shape B

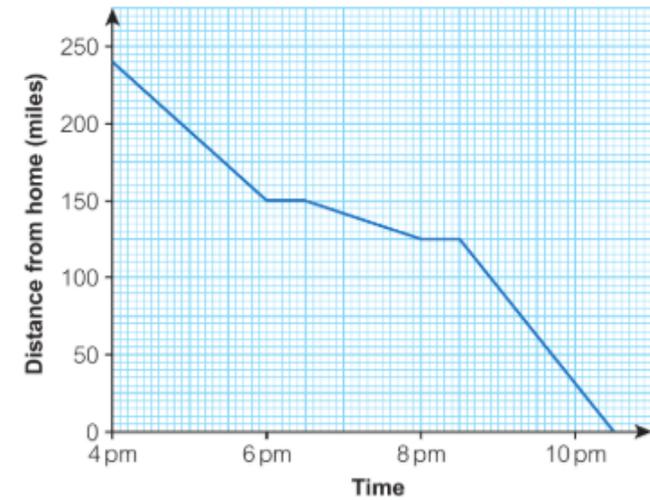
b shape C.



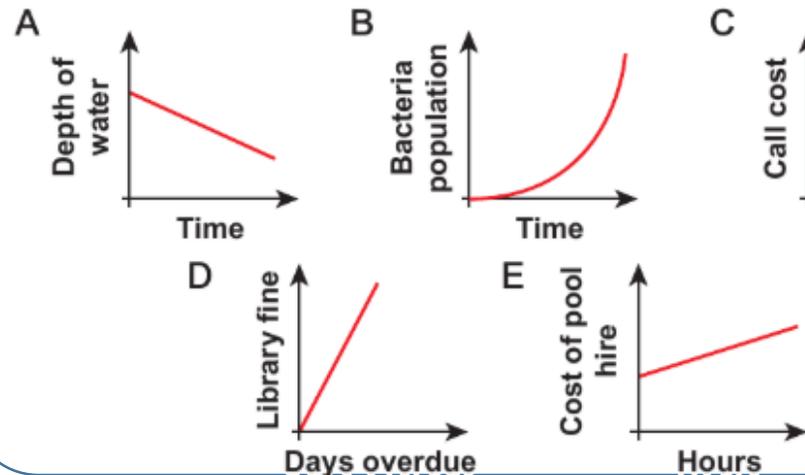
The Murphys' travel home after their holiday.

- a** How often did they stop on the journey?
- b** How many miles does one small square on the vertical axis represent?
- c** What is the total distance from holiday to home?
- d** How many minutes does one small square on the horizontal axis represent?
- e** What is the total time to travel home? Write it as a decimal.
- f** Work out the average speed in miles per hour using the formula

$$\text{average speed} = \frac{\text{total distance in miles}}{\text{total time in hours}}$$

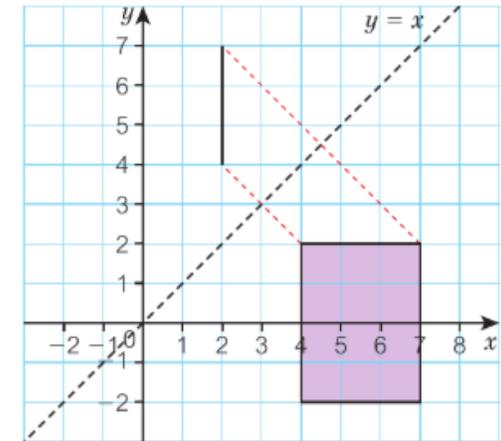


Which of these graphs show direct proportion?



Margareta has started to reflect the rectangle in the mirror line $y = x$.

- a** Copy the diagram.
- b** Turn the page so the mirror line is vertical and continue the reflection.
- c** Trace your completed diagram. Fold your diagram along the line $y = x$. What happens to the image and the object?



Unit 6:

- a Write $\frac{1}{6}$ as a decimal using dot notation.
- b Write $\frac{4}{6}$ as a decimal using dot notation.
- c Write another fraction that has the same decimal equivalent as $\frac{4}{6}$.
- d Do all fractions with a denominator of 6 recur? Explain your answer.

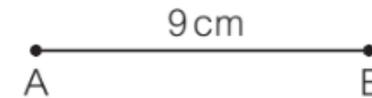
Find the new quantities after these percentage increases.

- a Increase 65 by 20%
- b Increase 80 by 15%
- c Increase 140 by 7.5%

- a Work out the percentage profit made on each item.
 - i Bought for £12, sold for £15
 - ii Bought for £15, sold for £19.50
 - iii Bought for £240, sold for £444
- b Check your answers.

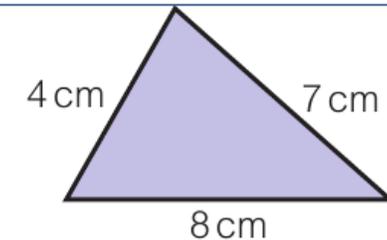
Unit 7:

- a** Draw the perpendicular bisector of a line AB 9 cm long.
- b** **i** Choose a point on the perpendicular bisector.
ii Measure its distance from A and from B.
iii Do this again for another point on the perpendicular bisector.
 What do you notice?
- c** Write the missing words in this sentence.

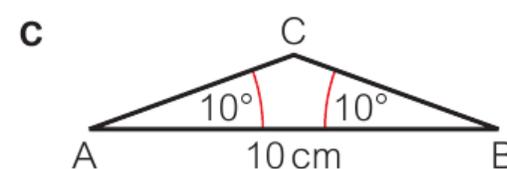
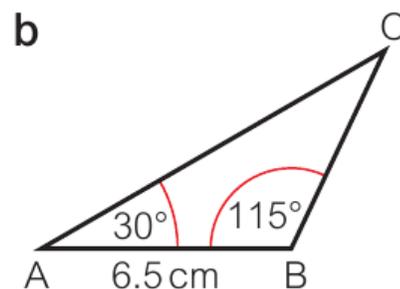
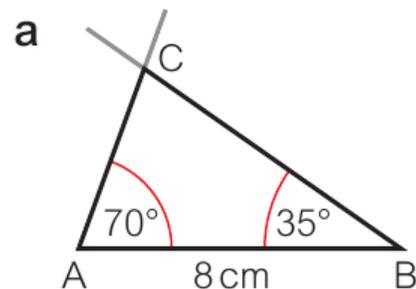


‘Points that are all the same distance from two dots make the _____ of the line joining them.’

Construct this triangle.



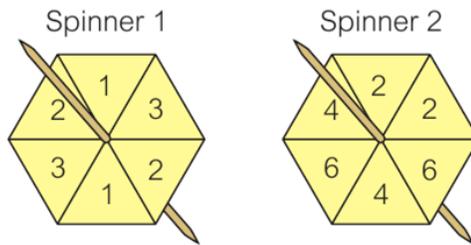
Use a ruler and protractor to draw each triangle accurately.



Unit 8:

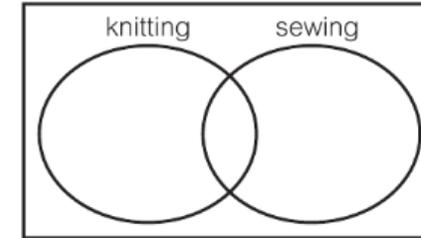
Brianne spins these two spinners.

- a** Draw a sample space diagram to show all the possible outcomes. How many are there?



- b** Work out the probability of
- i** a 3
 - ii** one number being half the other.
 - iii** both numbers being at least 2.
- c** Which is more likely: two even numbers or two odd numbers?

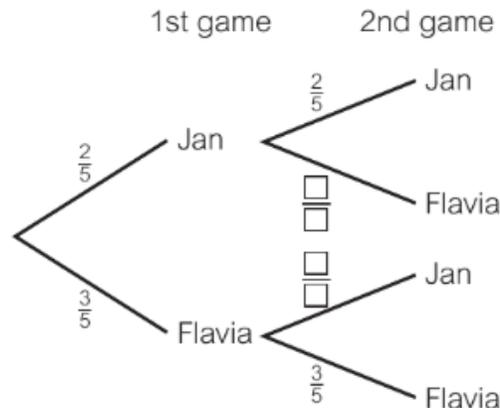
16 people go to a knitting group.
13 people go to a sewing group.
9 people go to a knitting and sewing group.



- a** Copy the Venn diagram.
- i** Write the number for knitting and sewing in the section where the circles overlap.
 - ii** How many people need to go in the rest of the knitting circle?
 - iii** How many people need to go in the rest of the sewing circle?

Jan and Flavia play draughts. They play two games. The result of the first game does not affect the result of the second game.

- a** Copy and complete the tree diagram.
- b** Work out the probability that
- i** Jan wins both games
 - ii** Flavia wins both games
 - iii** Jan and Flavia win one game each.



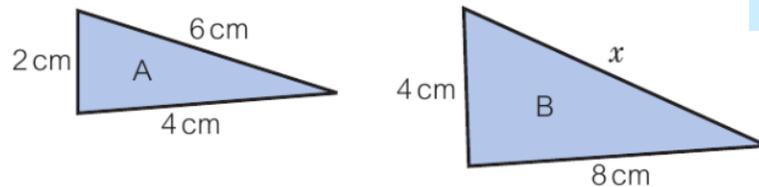
Units 9 - 10:

A map has scale 1 cm to 50 m.

What distance on the map represents a real-life distance of

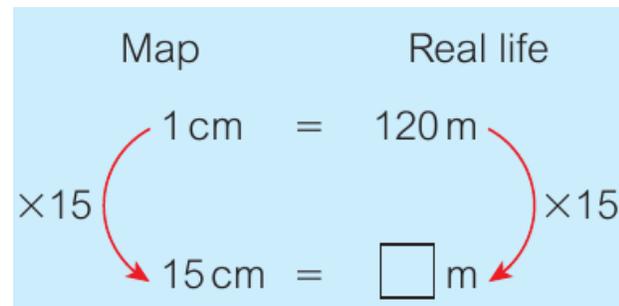
- a 100 m
- b 300 m
- c 1000 m
- d 2000 m
- e 1 km?

Triangle A and triangle B are similar.



Work out the missing length in triangle B.
Copy and complete this table.

Equation	Gradient	y -intercept
a $y = 3x + 1$	3	$(0, \square)$
b $y = 2x$		$(0, 0)$
c $y = x + 5$		$(0, \square)$
d $y = 2x - 3$		$(\square, -3)$

**Key point**

A **bearing** is an angle in degrees, clockwise from north.

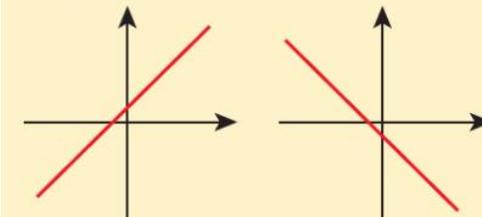
A bearing is always written using three digits.



This bearing is 025°.

Key point

To find the gradient, work out how many units the graph goes up for every 1 unit across.



Gradients are positive (/, uphill) or negative (\, downhill).

The larger the value, the steeper the gradient.

5.2 Matter, separating mixtures

5.2.1 Pure substances and mixtures

5.2.2 Solutions

5.2.3 Solubility

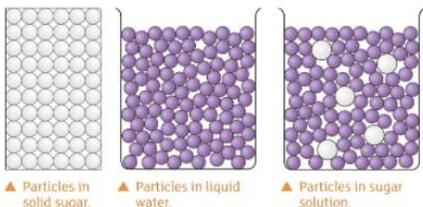
5.2.4 Filtration

5.2.5 Evaporation and distillation

5.2.6 Chromatography

Matter: 5.2.2 Solutions

Catherine adds sugar to water, and stirs. The sugar **dissolves** in the water. Water is the **solvent**. Sugar is the **solute**. This makes a **solution**. When a substance dissolves into a solvent the solute surrounds itself with the solvent.



Matter: 5.2.3 Solubility

If a substance can dissolve it is described as **soluble**, something that is **insoluble** will not dissolve.

When dissolving a something like sugar in a particular amount that would dissolve, when sugar can no longer be dissolved we describe it as a **saturated solution**.

Matter: 5.2.1 Pure substances and mixtures

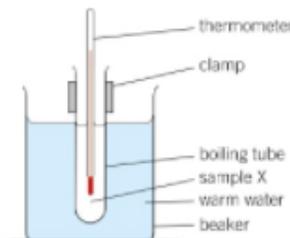
A **pure substance** contains one substance only, all the particles are the same.

A **mixture** contains two or more substances which may be elements or compounds.



▲ A mixture of two elements, iron and sulfur.

How can you identify a pure substance?
A pure substance has a fixed melting point and a fixed boiling point. You could heat up a liquid to see if it would boil at different temperatures.

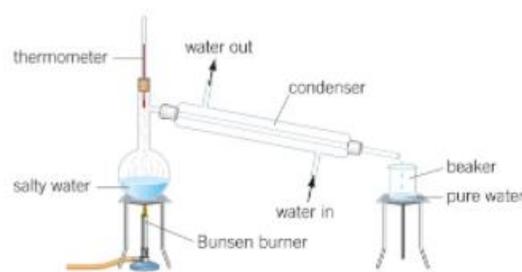


Matter: 5.2.5 Evaporation and distillation

Evaporation is used to make glue or to make crystals that can be used for medicines or to form salt crystals. **Distillation** is a separation technique that can separate a soluble solid from a liquid, for example salt and water. Salt and water have different boiling points so when we heat up salt water the water evaporated and salt is left behind.



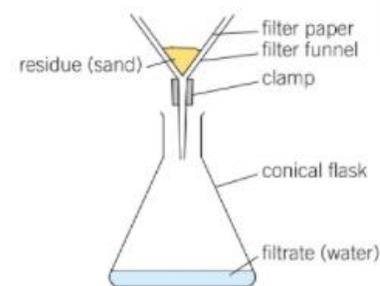
▲ Bolivia's salt desert.



▲ Removing the salt from salty water.

Matter: 5.2.4 Filtration

Filtration is a separation technique that is used to separate an insoluble solid from a liquid. For example, sand and water. If you pass sand and water through filter paper, the sand stays in the paper and the liquid passes through, the liquid that passes through the paper is called the **filtrate** and the sand is the **residue**.

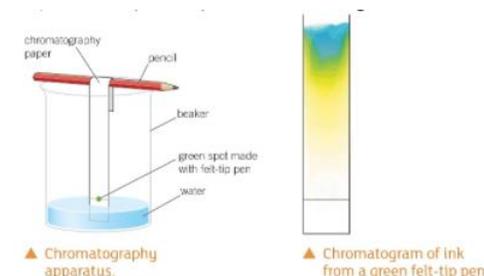


▲ Apparatus for a filtration experiment.

Matter: 5.2.6 Chromatography

Chromatography is another separation technique that can be used to separate the dyes. Dyes are used for things like colouring sweets or pen inks. It works by water being absorbed and moving up paper. A dye that is strongly attracted to the water than to the paper it travels further than a dye that is attracted more strongly to the paper than to the water so the dyes separate, to make a chromatogram.

Chromatography can be used to show the pigments in spinach, or nutrients in foods.



6.1 Reactions, acids and alkalis

6.1.1 Chemical reactions

6.1.2 Acids and Alkalis

6.1.3 Indicators and pH

6.1.4 Acid strength

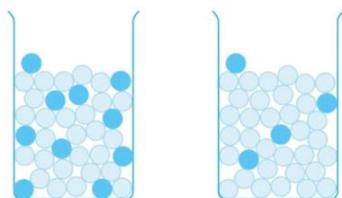
6.1.5 Neutralisation

6.1.6 Making salts

Reactions: 6.1.2 Acids and alkalis

Acids and alkalis are opposites. Acids are sour and are in things like lemons, alkalis are in things like soap and toothpaste. Both are normally safe but sometimes are **corrosive**, they could burn your skin or eyes. Some are also **irritants**, they cause itching and swelling.

We can describe these solutions as **concentrated** or **dilute**. The beaker on the right is more concentrated as it has more acid particles (dark blue) than on the left.



Reactions: 6.1.3 Indicators and pH

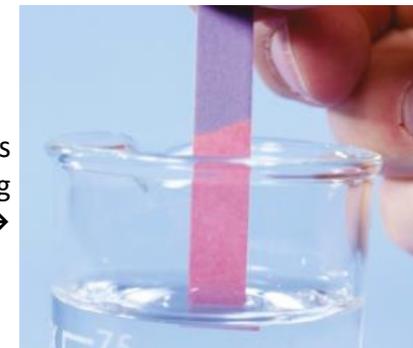
An **indicator** can tell us if a solution is acidic or alkaline. **Litmus** is a paper indicator. Red litmus turns blue on adding an alkali, and blue litmus paper turns red on adding acid.

To tell how acidic or alkaline a solution is you can use **universal indicator**. It tells us where on the **pH scale** a solution would fall.

Something red is a pH 1 and is strongly acidic. Something purple is a pH 14 and is strongly alkaline. Something green is a pH 7 and is described as **neutral**.

Effect of universal indicator on different solutions →

Blue litmus paper turning red in acid →



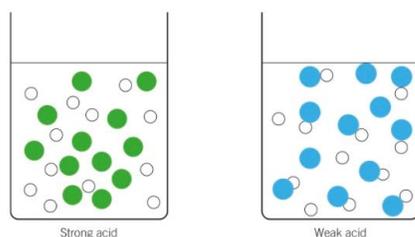
Reactions: 6.1.1

Chemical reactions

A chemical reaction is a change in which atoms are rearranged to make new substances. The atoms are joined together in one way before the reaction and in another after the reaction. This is why they aren't easily **reversible**. How can you tell a reaction has happened? You would see sparks, smell, change in temperature or fizzing.

Reactions: 6.1.4 Acid Strength

A strong acid is formed because all the particles split up and move around by themselves when they are dissolved. In a weak acid they stay together.



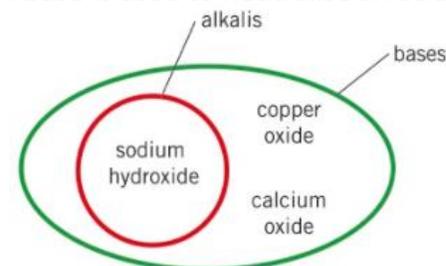
Strength and concentration are not the same thing.

- **Concentration** – is the amount of acid dissolved in water, the amount of particles in a given volume.
- **Strength** – is a measure of the number of acid particles that are split up.

Reactions: 6.1.5 Neutralisation

Neutralisation is a chemical reaction where an acidic substance is made to be closer to a pH 7.

A **base** is used to neutralise an acid:



Neutralisation can be used to make soil less acidic or alkaline so that crops and food could grow.

It can also be used to change the pH of lakes. This is so that animals and plants can live safely in them.

6.1 Reactions, acids and alkalis

6.1.1 Chemical reactions

6.1.2 Acids and Alkalis

6.1.3 Indicators and pH

6.1.4 Acid strength

6.1.5 Neutralisation

6.1.6 Making salts

6.2 Metals and non-metals

6.2.1 More about elements

6.2.2 Chemical reactions of metals and non-metals

6.2.3 Metals and acids

6.2.4 Metals and oxygen

6.2.5 Metals and water

6.2.6 Metal displacement reactions

Reactions: 6.2.1 More about elements

An **element** is one type of atom and all elements are listed on the **periodic table**. It shows their symbol, atomic weight and atomic mass.

The periodic table has two halves **metals** and **non-metals**.

The periodic table shows elements arranged by atomic number. Metals are on the left and right sides, while non-metals are on the right side. The noble gases (Group 8) are also non-metals. The elements are labeled with their chemical symbols and names.

Reactions: 6.2.2 Chemical reactions of metals and non-metals

Physical properties are things like malleable, shiny, brittle, dull, melting point, boiling point and electrical conductivity. They describe things you can observe and measure without changing the material.

Chemical properties describe chemical reactions.

If a metal or non-metal reacts with oxygen the new substance is called an **oxide**.

Word equations are used to describe chemical reactions in a simple way.

The starting substances are called **reactants** and substances made are called **products**.

Reactions: 6.1.6 Making salts

A **salt** is a substance that forms in the chemical reaction of an acid with a metal, or in a reaction of an acid with a compound that contains a metal.

Acids and metals

- Magnesium + hydrochloric acid → Magnesium chloride + hydrogen
- Zinc + sulfuric acid → Zinc sulfate + hydrogen

Acids and bases

- Sodium hydroxide + hydrochloric acid → sodium chloride + water
- Copper oxide + nitric acid → copper nitrate + water

- 1** Add copper oxide powder (a base) to dilute sulfuric acid. Keep adding until some copper oxide is left over. All the acid has now reacted.
- 2** Filter to remove the copper oxide that has not reacted.
- 3** Heat the copper sulfate solution in an evaporating basin until most of the water evaporates.
- 4** Leave the evaporating basin in a warm place. The rest of the water evaporates. Copper sulfate crystals remain.

So; **hydrochloric acid** makes **chloride** salts, **sulfuric acid** makes **sulfate** salts, **nitric acid** makes **nitrate** salts.

6.1 Reactions, acids and alkalis

- 6.1.1 Chemical reactions
- 6.1.2 Acids and Alkalis
- 6.1.3 Indicators and pH
- 6.1.4 Acid strength
- 6.1.5 Neutralisation
- 6.1.6 Making salts

6.2 Metals and non-metals

- 6.2.1 More about elements
- 6.2.2 Chemical reactions of metals and non-metals
- 6.2.3 Metals and acids
- 6.2.4 Metals and oxygen
- 6.2.5 Metals and water
- 6.2.6 Metal displacement reactions

Reactions: 6.2.4 Metals and Oxygen



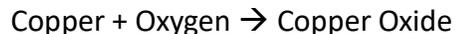
Magnesium reacts with oxygen even when you do not heat it. The reaction of any metal with oxygen, in which the substance combines with oxygen, is an **oxidation** reaction.

When a metal reacts with oxygen the product is an oxide, but there are differences in the reactions of metals with oxygen.

Zinc powder into a Bunsen flame, you see bright-white sparks:



Copper doesn't burn in a Bunsen flame instead it forms black copper oxide:



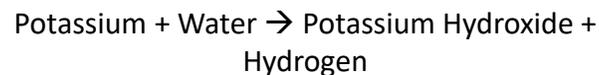
Whereas Gold does not react with oxygen at all so it stays shiny.

Reactions: 6.2.5 Metals and Water



Group 1 metals react vigorously with water, there is a flame when potassium reacts with water, and sodium and lithium react less vigorously.

But the pattern in equation and reaction are always the same:

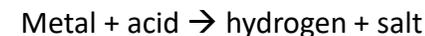


The amount a metal will react depends on its position in the **reactivity series**. The higher up in the series the more reactive a metal is:

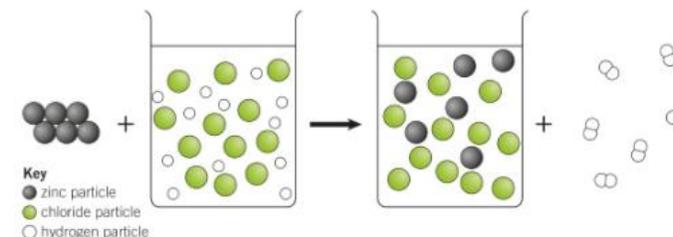
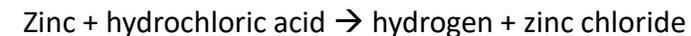
reactive
 potassium
 sodium
 lithium
 calcium
 magnesium
 aluminium
 zinc
 iron
 lead
 copper
 silver
 gold
unreactive

Reactions: 6.2.3 Metals and acids

Whenever a metal reacts with an acid two products are made. These are always **hydrogen** and a **salt**.



E.g.

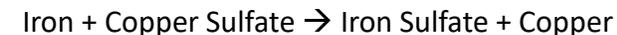


▲ The reaction of zinc with hydrochloric acid makes zinc chloride solution and hydrogen gas. Water particles in the solution are not shown. *Not to scale.*

Reactions: 6.2.6 Metal displacement reactions

When a metal and a metal compound are reacted together the more reactive metal can take the place of or **displace** a less reactive metal. This reaction is a **displacement reaction**.

For example, Iron is more reactive than copper:



The Iron is more reactive so can take the Sulfate from the copper.

Key question 1: What is weather and climate?

Weather describes the day-to-day conditions of the atmosphere.

Weather can change quickly - one day it can be dry and sunny and the next day it may rain.

Climate describes average weather conditions over longer periods and over large areas.

Weather types include: Precipitation, Sun, Clouds, Thunder

Climate zones include: Polar, Temperate, Mediterranean, Tropical, Arid, Mountainous .

The four factors that affect climate are: (LAWS)

Latitude, **A**ltitude, **P**revaling **W**inds, **D**istance from the **S**ea

Key question 3: What are the affects of extreme weather events?

Primary affects: What affects happened straight away? -loss of life, injuries, buildings destroyed

Secondary affects: What affects happened after the first day?-homeless people, lack of food

Long term affects: What will the situation be like in 5 years?

Social affects: the affects on people (loss of life)

Economic affects: the financial cost (damages)

Environmental affects: how the area is destroyed (loss of wildlife



Key question 2: What are the causes and locations of extreme weather events?

The **causes** of different extreme weather events including:

- Tropical Storms
- Hurricanes, Typhoons and Cyclones
- Tornadoes
- Flooding

Where do these types of extreme weather occur (their **location**)?

- In land? -low lying areas?
- coastal areas (near the sea)? - near the equator?



Websites and further reading:

<http://www.bbc.co.uk/education/guides/zw9qtfr/revision>

<http://www.bbc.co.uk/education/guides/zrv4jxs/revision>

<http://www.bbc.co.uk/education/guides/zc39q6f/revision/3>

http://www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/hurricanes_rev3.shtml

<https://getrevising.co.uk/diagrams/typhoon-haiyan>

Key vocabulary to define and learn:

Weather	Climatic Zones	Altitude	Prevailing Winds	Climate	Cyclone	Hurricane	Precipitation	Latitude	
	Equator	Tornado	Primary affects		Secondary affects		Tropical		Vortex
	Polar	Temperate	Mountainous	Mediterranean		Atmosphere	Arid		

Key question 1: How did people live in Medieval Britain?

The role of the Lord in a Medieval village – to manage and control the village including the servants, villains and Freemen, A **Lord's Manor** – how was it built, what materials were used? How many rooms did it have? How much

land did the Lord have?

The **role of a villain/peasant** in a Medieval village – to work for the Lord and farm the land.

A **peasants house** – how was it built, what materials were used?

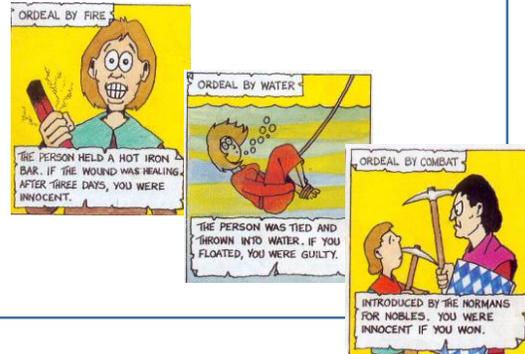
How many people lived there? Where did the animals live?



Key question 3:

What happened when people committed crimes in Medieval Britain?

- What crimes took place?
- What were the ordeals? (**Fire, Water, Combat**)
- What **methods of punishment** were used?
- Which was the **worst method**?
- Which was the **fairest method**?
- Who really was in control during these times?



Key question 2: Why was the Black Death so disastrous??
The types of Plague that created the

Black Death:

-**Bubonic Plague**

-**Pneumonic Plague**

The **Symptoms** of the Black Death:

-Bubo (boils)

-Vomiting blood

-Fever

-Rash of red/black marks



Key questions:

- How did the Black Death spread so quickly?
- Why did so many people die from it?
- How did some people try to cure the Black Death?

Websites and further reading:

http://www.bbc.co.uk/bitesize/ks3/history/middle_ages/everyday_life_middle_ages/revision/8/

<http://www.bbc.co.uk/education/guides/zm4mn39/revision>

http://www.bbc.co.uk/bitesize/ks3/history/middle_ages/the_black_death/revision/6/

<http://www.bbc.co.uk/education/topics/z6xmn39/resources/1>

<http://www.historyonthenet.com/medieval-life-crime-and-punishment/>

Key vocabulary to define and learn:

Manor

Pneumonic

Lord

Bubo

Peasant

Black Death

Villain

Ordeal

Freeman

Guilty

Church

Innocent

Bubonic

Key concept 1: Equality and Human Rights.

What is equality?

'The state of being equal, especially in status, rights, or opportunities' To not be discriminated against due to race, gender or ability.

What are Human rights?

The Declaration of Human Rights set out to create a list of all the rights that human should all have. This was created in 1948 however it was not made law. The rights listen include: The Right to Life, The right to speech freely



Key concept: Gender inequality and Sexism

What is gender inequality?

Gender inequality is the idea that women and men are not equal and are treated different in society. This is a form of discrimination.

Examples of **Gender inequality**;

- Portrayal of women in films/stories. Example: Disney stories. – women must rely on men to succeed (Sleeping Beauty, Belle). Women must be domestic (Cinderella, Snow White)
- Jobs for women – unequal pay grades
- Votes for Women – **Suffragettes (1928)**



Key concept 3: Race inequality and Racism

What is racism?

Racism is when people **discriminate** against someone because of the colour of their skin.

• **Who took a stand against racism?**

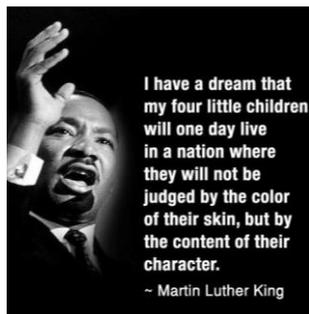
- Martin Luther King
- Rose Parks
- Nelson Mandela

• **What did they work to achieve and was this successful?**

and was this **successful?**

Thought point:

Why is there still racism today?



Websites and further reading:

- <https://www.youtube.com/watch?v=oh3BbLk5UIQ>
- <http://www.bbc.co.uk/schools/gcsebitesize/rs/prejudice/christianityrev1.shtml>
- <http://www.bbc.co.uk/education/topics/z72xsbk/resources/1>
- http://www.bbc.co.uk/schools/gcsebitesize/history/tch_wjec/usa19292000/2gainequalrights3.shtml

Key vocabulary to define and learn:

- | | | | | | | | | |
|-------------|--------------|----------------|---------------------|----------------|----------|-------------|--------|--------|
| Equality | Human Rights | United Nations | Inequality | Discrimination | Gender | Stereotypes | Sexism | Racism |
| Paralympics | Disability | | homosexual | Ageism | | Homophobic | | |
| | | | Equal Opportunities | | | Rights | Fair | Future |
| | | | | | Campaign | | | |

Subject: Spanish (Y7)

Term: 5&6

Topic: Viva 1; Módulo 5 – Mi ciudad (*My city*)

Key Content 1 – Mi familia y yo



Talking about your family

Saying what you and others do/like/do not like

Describing yourself and others.



Using TENER and SER – to have and to be

Key Content 2 – ¿Qué hay en tu ciudad? (*What do you study?*)



Saying where you live

Places in the town



Using positive and negative statements about what is and isn't in your town

Key Content 3 – ¿Qué haces en la ciudad? (*What do you do in your city?*)



Say what you do

Use the verb IR 'to go' to say where you go in the city

Say where you go/what you do at different times of day

Key Content 4 – En la cafetería (*In the café*)



Ordering snacks

Food and drink items



Using 'I want', 'I would like'

Asking and answering questions

Key Content 5 – ¿Qué vas a hacer? (*What are you going to do?*)



Using the verb 'to go' to talk about the future

Saying what you are going to do planning for a future event

Understanding verb infinitives and reviewing the present and the compound future.

Activities (*you may complete some or all of these...*)

Acting out a dialogue in a café



Describing a plan with times of day



Creating a city plan and description



Planning weekend activities



Websites and further reading:

Search on www.quizlet.com for 'Viva 1, M5'
Use the fifth module in your textbook and on www.pearsonactivelearn.com

Mi ciudad



Key Vocabulary (See Textbook pages 114 &115) *For revision you need to be able to understand all the texts on the double pages*

Practise vocabulary at home and/or with a friend at school

Tick off the modules above as you complete them, and make sure you can still do these topics for the Assessment Point. Look over your learning and complete anything missing at home each week: **Look, cover, write, check...**

You need: **Key questions** **Places in the town** **The verb to go (IR)** **Time – numbers and time phrases** **Snacks** **Restaurant dialogues** **Free time activities (infinitives)**

High Frequency Words: *Voy (I go/am going) Vamos (We go/are going) Aquí (Here) Hay (there is/are) con (with) a (to) más (more) ciudad (city) es (it is) son (they are)*

¿Cuántas personas hay en tu familia? How many people are there in your family?

En mi familia hay...	In my family, there are...	mis primos	my cousins
personas.	people.	¿Cómo se llama tu madre?	What is your mother called?
mis padres	my parents	Mi madre se llama...	My mother is called...
mi madre	my mother	¿Cómo se llaman tus primos?	What are your cousins called?
mi padre	my father	Mis primos se llaman...	My cousins are called...
mi abuelo	my grandfather	y...	and...
mi abuela	my grandmother	su hermano	his/her brother
mi bisabuela	my great-grandmother	sus hermanos	his/her brothers
mi tío	my uncle		
mi tía	my aunt		

Los números 20 - 100 Numbers 20 - 100

veinte	20	setenta	70
treinta	30	ochenta	80
cuarenta	40	noventa	90
cincuenta	50	cien	100
sesenta	60		

¿De qué color tienes los ojos? What colour are your eyes?

Tengo los ojos...	I have... eyes.	marrones	brown
azules	blue	verdes	green
grises	grey	Llevo gafas.	I wear glasses.

¿Cómo tienes el pelo? What's your hair like?

Tengo el pelo...	I have... hair.	rizado	curly
castaño	brown	largo	long
negro	black	corto	short
rubio	blond	Soy pelirrojo/a.	I am a redhead.
azul	blue	Soy calvo.	I am bald.
liso	straight		

¿Cómo es? What is he/she like?

Es...	He/She is...	joven	young
No es muy...	He/She isn't very...	viejo/a	old
alto/a	tall	Tiene pecas.	He/She has freckles.
bajo/a	short	Tiene barba.	He has a beard.
delgado/a	slim	mis amigos	my friends
gordo/a	fat	mi mejor amigo/a	my best friend
guapo/a	good-looking	su mejor amigo/a	his/her best friend
inteligente	intelligent		

¿Cómo es tu casa o tu piso? What is your house or flat like?

Vivo en...	I live in...	cómodo/a	comfortable
una casa	a house	grande	big
un piso	a flat	moderno/a	modern
antiguo/a	old	pequeño/a	small
bonito/a	nice		

¿Dónde está? Where is it?

Está en...	It is in...	un pueblo	a village
el campo	the countryside	el norte	the north
la costa	the coast	el sur	the south
una ciudad	a town	el este	the east
el desierto	the desert	el oeste	the west
la montaña	the mountains	el centro	the centre

Palabras muy frecuentes High-frequency words

además	also, in addition	un poco	a bit
bastante	quite	mi/mis	my
porque	because	tu/tus	your
muy	very	su/sus	his/her
¿Quién...?	Who?		

Estrategia 4

Mnemonics

One way of remembering new words is to invent a mnemonic: a rhyme or saying that sticks easily in the mind. Here's an example from the word list above, but it's best to make up your own - you'll find them easier to remember/harder to forget.

B en
O ffers
N ice
I nvitations
T o
O thers

You can't learn every word like this - it would take ages! But it's a great way of learning those words that just don't seem to stick.

¿Qué hay en tu ciudad? What is there in your town?

Hay...	There is...	una universidad	a university
un castillo	a castle	En...	In...
un centro comercial	a shopping centre	mi barrio	my neighbourhood
un estadio	a stadium	mi ciudad	my town, my city
un mercado	a market	mi pueblo	my village, my town
un museo	a museum	No hay museo.	There isn't a museum.
un parque	a park	No hay nada.	There's nothing.
una piscina	a swimming pool	unos museos	some museums
una plaza	a square	unas tiendas	some shops
un polideportivo	a sports centre	muchos museos	a lot of museums
un restaurante	a restaurant	muchas tiendas	a lot of shops
una tienda	a shop		

¿Te gusta vivir en...? Do you like living in...?

Me gusta mucho vivir en...	I like living in... a lot.	porque hay/es...	because there is/it is...
No me gusta nada vivir en...	I don't like living in... at all.		

¿Qué hora es? What time is it?

Es la una.	It's one o'clock.	Son las ocho menos veinte.	It's twenty to eight.
Son las dos.	It's two o'clock.	Son las nueve menos cuarto.	It's quarter to nine.
Es la una y cinco.	It's five past one.	Son las diez menos diez.	It's ten to ten.
Son las dos y diez.	It's ten past two.	Son las once menos cinco.	It's five to eleven.
Son las tres y cuarto.	It's quarter past three.	Son las doce.	It's twelve o'clock.
Son las cuatro y veinte.	It's twenty past four.	¿A qué hora?	At what time?
Son las cinco y veinticinco.	It's twenty-five past five.	a la una	at one o'clock
Son las seis y media.	It's half past six.	a las dos	at two o'clock
Son las siete menos veinticinco.	It's twenty-five to seven.		

¿Qué haces en la ciudad? What do you do in town?

Salgo con mis amigos.	I go out with my friends.	a la cafetería	to the cafeteria
Voy...	I go...	a la playa	to the beach
al cine	to the cinema	de compras	shopping
al parque	to the park	de paseo	for a walk
a la bolera	to the bowling alley	No hago nada.	I do nothing.

En la cafetería In the café

Yo quiero...	I want...	gambas	prawns
bebidas	drinks	jamón	ham
un batido de chocolate/ de fresa	a chocolate/strawberry milkshake	pan con tomate	tomato bread
un café	a coffee	patatas bravas	spicy potatoes
una Coca-Cola	a Coca-Cola	tortilla	Spanish omelette
una Fanta limón	a lemon Fanta	¿Algo más?	Anything else?
un granizado de limón	an iced lemon drink	No, nada más.	No, nothing else.
un té	a tea	¿Y de beber?	And to drink?
raciones	snacks	¿Cuánto es, por favor?	How much is it, please?
calamares	squid	Son cinco euros setenta y cinco.	That's 5,75 €.
croquetas	croquettes		

¿Qué vas a hacer? What are you going to do?

Voy a salir con mis amigos.	I am going to go out with my friends.	Vamos a jugar al voleibol.	We are going to play volleyball.
Vas a ver la televisión.	You are going to watch TV.	Vais a chatear.	You are going to chat.
Va a ir de paseo.	He/She is going to go for a walk.	Van a hacer los deberes.	They are going to do their homework.

¿Cuándo? When?

este fin de semana	this weekend	luego	then
el sábado por la mañana	on Saturday morning	finalmente	finally
el domingo por la tarde	on Sunday afternoon/ evening	a las tres de la tarde	at three o'clock in the afternoon
primero	first	(un poco) más tarde	(a little) later

Palabras muy frecuentes High-frequency words

aquí	here	hasta	until
a ver	let's see	más	more
con	with		

Estrategia 5

Verbs that you see everywhere!

You can use the verb **tener** in lots of situations:

- Tengo** una serpiente.
- Tengo** dos hermanastras.
- Tengo** doce años.

Tener is a 'high-frequency' verb. Learning verbs like this will help you to say a lot more in Spanish!

You have met several other high-frequency verbs in *¡Viva!*. Try to find four different ways of finishing each of these sentences:

- 1 Voy... 2 Juego... 3 Es... 4 Hago...

Key Content 1 – Mon temps libre (*My free time*)

Describing different free time activities

Saying how often you do something

Discussing using technology

Giving opinions

Using sequencers



Key Content 2 – Ma ville (*My town?*)

Saying where you live



Saying what there is in your town

Saying what there is not in your town

Giving opinions and descriptions of where you live

Key Content 3 – Qu'est-ce que tu peux faire? (*What can you do?*)

Say what you can/like to do in your town

Using longer clauses and adding extra detail



Key Content 4 – C'est où? (*Where is it?*)

Giving and asking for directions

Understanding directions and instructions

Using prepositions



Key Content 5 – Tu veux...? (*Do you want...?*)

Asking people out

Giving suggestions & responses

Saying what you would like/would not like to do



Activities (*you may complete some or all of these...*)

Create a free time diary

Create a map/poster/leaflet/tourist guide to a town

Take part in role play or a directions game/treasure hunt

Websites and further reading:

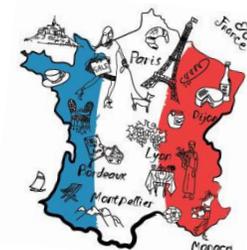
Search on www.quizlet.com for 'Studio 1, M4'

Use the third module in your textbook and on

www.pearsonactivelearn.com

Use www.French-games.net to practise and play language games

Use www.languagesonline.org and go to the French Grammar section to practise the present tense of ER (and other) verbs including AVOIR/ ETRE/ FAIRE



Ma ville - My town

Key Vocabulary (See Textbook pages 86 & 87) *For revision you need to be able to understand all the texts on the double pages*

Practise vocabulary at home and/or with a friend at school

Tick off the points above as you complete them, and make sure you can still do these topics for the Assessment Point. Look over your learning and complete anything missing at home each week:

Look, cover, write, check...

You need: **Free time activities** **Places in town** **Adjectives & Opinions** **The verb can & want (POUVOIR & VOULOIR)** **Directions** **Prepositions** **The verb to do (FAIRE)**

High Frequency Words: *Il y a...* (*There is/are*), *Il n'y a pas* (*There is not...*), *Je peux/tu peux* (*I can/you can*), *Je veux* (*I want*), *Tu peux...?* (*can you*), *Tu veux...* (*Do you want...*), *Où est...* (*where is..*)



Year 7 – Key Vocab – Term 5&6

Là où j'habite • Where I live

Qu'est-ce qu'il y a ... ?	What is there ... ?
Il y a ...	There is ...
un café	a café
un centre commercial	a shopping centre
un centre de loisirs	a leisure centre
un château	a castle
un cinéma	a cinema
une église	a church
un hôtel	a hotel
un marché	a market
un parc	a park
un restaurant	a restaurant
un stade	a stadium
une patinoire	an ice rink
une piscine	a swimming pool
des magasins	shops
des musées	museums
Il n'y a pas de ...	There isn't a ... / There are no ...

Les opinions • Opinions

Tu aimes ta ville/ ton village?	Do you like your town/ village?
Je pense que ...	I think that ...
À mon avis, ...	In my view ...
C'est ...	It's ...
bien	good
super	great
joli	pretty
intéressant	interesting
ennuyeux	boring
vraiment nul	really rubbish
trop petit	too small
J'aime ça.	I like that.
J'adore ça.	I love that.
Tu es d'accord?	Do you agree?
Oui, je suis d'accord.	Yes, I agree.
Non, je ne suis pas d'accord.	No, I disagree.

Les directions • Directions

Pardon ...	Excuse me ...
Où est ... ?	Where is ... ?
Où sont ... ?	Where are ... ?
C'est ...	It's ...
à gauche	left
à droite	right
tout droit	straight on
au carrefour	at the crossroads
entre	between
derrière	behind
devant	in front of

Les adverbes de fréquence

• Expressions of frequency

d'habitude	usually
normalement	normally
quelquefois	sometimes
tous les weekends	every weekend

Coucou! • Hi there!

je veux	I want
tu veux	you want (singular, informal)
il/elle veut	he/she wants
on veut	we want
nous voulons	we want
vous voulez	you want (plural/formal)
ils/elles veulent	they want
Bonne idée!	Good idea!
Super!	Fabulous!
Génial!	Great!
D'accord.	OK.
Oui, c'est super top.	Yes, that's really great.
Oui, je veux bien.	Yes, I want to.
Non, je n'ai pas envie.	No, I don't want to.
Si tu veux.	If you want to.
Non merci.	No, thanks.

Qu'est-ce qu'on peut faire à ... ?

• What can you do at/in ... ?

je peux	I can
tu peux	you can (singular, informal)
il/elle/on peut	he/she can/we can
nous pouvons	we can
vous pouvez	you can (plural/formal)
ils/elles peuvent	they can
aller au concert	go to a concert
faire du bowling	go bowling
faire du roller	go roller-skating
faire du skate	go skateboarding
faire du vélo	go cycling
faire une promenade en barque	go on a boat trip
manger au restaurant	eat at a restaurant
visiter les jardins/ les monuments/ les musées	visit gardens/ monuments/ museums

Les mots essentiels • High-frequency words

assez	quite
mais	but
ou	or
puis	then
très	very
sur	on
en (été)	in (summer)
quand	when
tout/toute/tous/toutes	all
par (deux fois par semaine)	per (twice a week)
d'habitude	usually
d'abord	first of all
ensuite	then/next
puis	then/next

Le sport • Sport

Je joue ...	I play ...
au basket	basketball
au billard	billiards/snooker
au foot(ball)	football
au hockey	hockey
au rugby	rugby
au tennis	tennis
au tennis de table/ au ping-pong	table tennis
au volleyball	volleyball
à la pétanque/aux boules	boules
sur la Wii	on the Wii
Tu es sportif/sportive?	Are you sporty?
Je suis (assez) sportif/ sportive.	I'm (quite) sporty.
Je ne suis pas (très) sportif/sportive.	I'm not (very) sporty.

Les ordinateurs et les portables

• Computers and mobile phones

Qu'est-ce que tu fais ...	What do you do/are you doing ...
avec ton ordinateur?	on your computer?
avec ton portable?	on your mobile phone?
Je joue.	I play/I'm playing games.
Je surfe sur Internet.	I surf/I'm surfing the net.
Je tchatte sur MSN.	I chat/I'm chatting on MSN.
Je regarde des clips vidéo.	I watch/I'm watching video clips.
Je télécharge de la musique.	I download/I'm downloading music.
J'envoie des SMS.	I text/I'm texting.
Je parle avec mes ami(e)s/ mes copains/ mes copines.	I talk/I'm talking to my friends/mates.
J'envoie des e-mails.	I send/I'm sending

Key Concept 1: Theatre Roles and Responsibilities

What are the key roles and responsibilities within a Theatre Company?

Performance Roles

Can you name three performance roles?

Production Roles

Can you name three production roles?

Theatre Management Roles

Can you name three theatre management roles?



It takes many people to run a theatre and theatre production and they all have to work together as a team to create a successful show.

What shows have you seen in the theatre?

Key Concept 2: Theatre Appreciation

You will learn how to analyse and evaluate Live theatre and appreciate the choices made by the director, choreographer and production teams to create the show.



You will look at extracts from different professional theatre shows and learn how to appreciate the passion, effort and dedication that goes into each element.



Key Concept 3: Performance and Production

You will learn how to analyse set design, costume design, lighting design, musical choices and interpret actors language and movement.



Key vocabulary

Command Words: Analysis, Define, Evaluate, Compare, Justify, Interpretation, Describe, Explain.

You will learn key vocabulary related to: Stage Directions, Types of Staging, Types of Lighting, Costume materials, Musical Instruments, Dance and Drama terminology

Websites and further reading:

BBC Bitesize: <https://www.bbc.co.uk/bitesize/guides/z27fyrd/revision/1>

History of Musical Theatre

<https://www.musicals101.com/stagecap.htm>

Youtube: How Theatre Can Save the World (Tedx Talk)

https://www.ted.com/talks/rachel_harry_how_theatre_education_can_save_the_world

Term 5 Challenge: To research a theatre company and create a profile page about their work.
Key Roles and Responsibilities? Theatre Productions? Where they are based? How long have they been running? Who are their target audience?

Subject: Performing Arts

Term: 6

Topic: Musical Theatre

Key Concept 1: What is Musical Theatre?

You will learn about the history of Musical Theatre.

Where did it originate?

How did it develop?

What is a modern musical like?

What makes a musical different to other performances?

What musicals have you seen?



Key Concept 2: Being a Performer

You will learn how to work as a performer in a company and how each person has to contribute to the final performance. You will learn extracts from musicals which will be developed and then performed as a class.



Key Concept 3: Application of Performance Skills

You will learn how to apply a range of performance skills from your work in Drama, Dance and Music to develop extracts from musicals. You will apply physical, technical, mental and expressive skills within a performance.



Websites and further reading:

Frozen Live the Musical: https://www.youtube.com/watch?v=cXY_rrnBkWw

BBC Bitesize: Musical Theatre

<https://www.bbc.co.uk/bitesize/guides/z27fyrd/revision/1>

The Power of Musicals (Ted Talk)

<https://www.youtube.com/watch?v=ENZiqwGcb8Q>



Key vocabulary

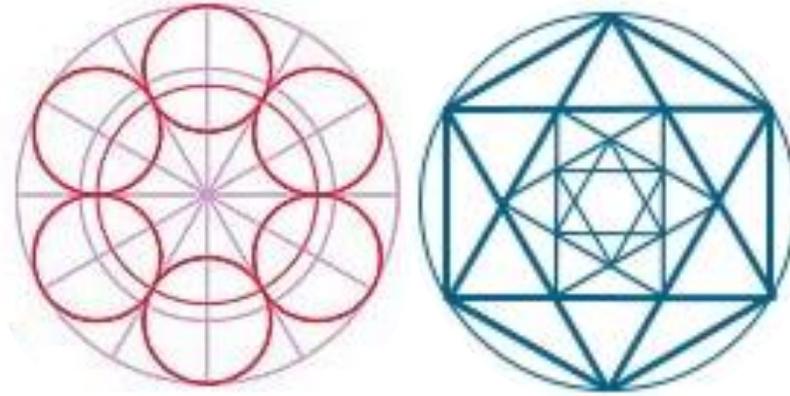
Blocking, Act, Backstage, Cast, Company, Cue to Cue, Dialogue, Director, Interval, Lighting, Matinee, Prompt, Props, Proscenium Arch, Technical Rehearsal, Visuals

Term 5 Challenge: To research a musical of your choice and create a profile page about the show.

When was it first performed? Cast and Characters, Key moments in the Story, Why is it successful? What is the target audience?

Key question 1: What is Eastern Art?

It is important to investigate art from all cultures to inspire your work. On the left is an example of an Islamic style artist you will study Sama Mara and to the right is a Hindu style artist Eleanor Rose. What similarities can you see? What differences do you notice? How do you think these patterns are created?

**Key question 2: How to Draw and Islamic Pattern?**

Islamic Patterns are made up of simple geometric shapes repeated and rotated. Can you reproduce one of these images using a ruler and compass.

This term you will create stencils with these patterns watch the videos below to help you prepare.

Key question 3: What is Relief Printing?

Relief printing is the process of creating a print block where the surface is changed through adding or removing material. Ink is applied to the print block using a roller, and then the block is pressed against paper.

Watch this video to learn more about the process that you will complete this term.

<https://www.youtube.com/watch?v=5qj0wseNsn4>

**Websites and further reading:**

BBC Bitesize:

<http://www.bbc.co.uk/schools/gcsebitesize/art/gallery/printmakingrev1.shtml>

Pinterest: Search "Islamic art patterns" and "hindu mandala patterns"

Youtube: Geometric Drawing Tutorials

<https://www.youtube.com/watch?v=bSgdw3VPy-Q>

<https://www.youtube.com/watch?v=2lZ9y0ltGrI>

Key vocabulary to define and learn

Symmetry

Repeat Pattern

Rotation

Composition

Geometric

Relief

Layers

Polyprint

Design Challenge:

Create a colouring page design inspired by Islamic/ Mandala patterns. The best designs will be photocopied and used as part of a wellbeing club activity. The designs be submitted by the last day of term to Miss Garrett.

Portraiture- A portrait is a painting, photograph, sculpture, or other artistic representation of a person, in which the face is the focal point. Portraiture is a very old art form going back at least to ancient Egypt 5,000 years ago. Before the invention of photography, a painted, sculpted, or drawn portrait was the only way to record the appearance of someone.

Within this unit we will be exploring ways of creating self-portraits within 2D formats. You will be looking at how to construct a portrait whilst:

- looking at the shape of your face and facial features,
- experimenting with forming hair styles
- exploring facial expressions and
- examining tonal modelling

Techniques/ materials we are exploring

- Sgraffito- scratching through a surface to reveal a lower layer of a contrasting colour
- Photomontage- an image constructed from combining a number of photographic images
- Proportions of the face (mathematical approach)
- Tonal modelling

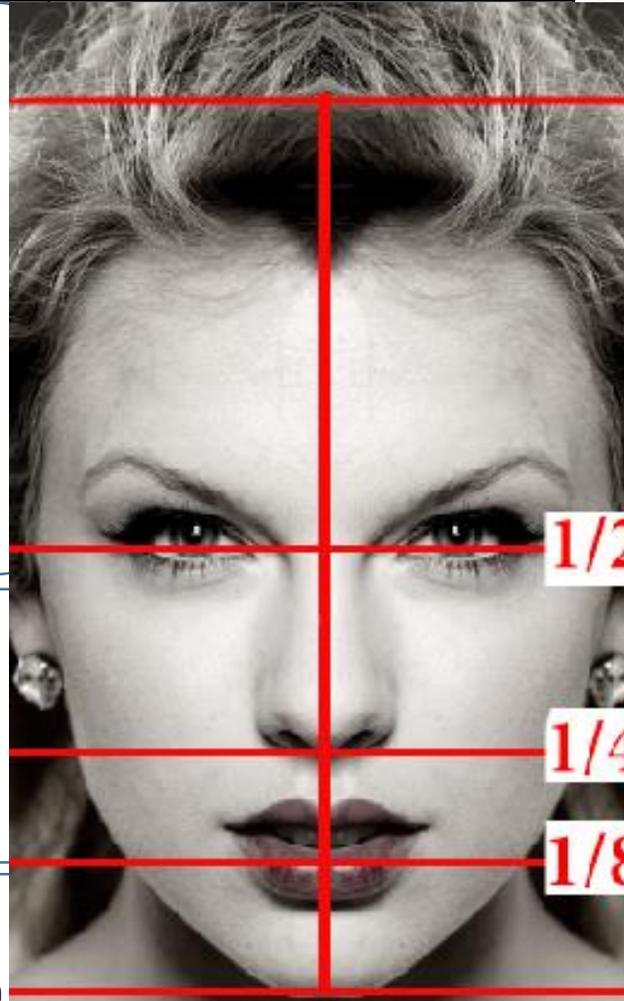
Key Vocabulary

Single line drawing- a single, unbroken line is used to create an image.

Collage- a piece of art made by sticking various different materials such as photographs and pieces of paper or fabric on to a backing

Observation drawing- drawing or painting from life (such as sketching a bowl of fruit (still life), drawing from a model (figurative), or drawing a street scene (landscape))

Tonal modelling- Graduated light to dark tones to make a two-dimensional shapes appear to be three dimensional.



Artists we are exploring

Picasso- Picasso's portraits shows a huge variety and innovation of his art, exploring his portrayal of family, friends and lovers. He explored incredible creative processes between drawing from life, humorous caricatures and expressive paintings from memory.



Boris Schmitz- A very young artist who shows great promise. Schmitz currently studies art in Cologne, Germany, creating seemingly simple yet dynamic portrait illustrations using one continuous line.



Websites and further reading

Portraiture- <http://www.artfactory.com/portraits/pencil-portraits/drawing-portraits.html>

BBC Bitesize- <http://www.bbc.co.uk/education/subjects/z6f3cdm>

Tate Galleries- <http://www.tate.org.uk/art/art-terms>

Boris Schmitz home page- <http://borisschmitz.tumblr.com>

Key topic 5: Algorithms and microbits

5.1 Using and programming BBC Micro:bits

5.1 Algorithms and Micro:bits

5.1.1 Identify how a Micro:bit can be used in computer programming – with specific British examples inc bloodhound supercar.

5.1.2 Construct an algorithm for a Micro:bit to execute

5.1.3 Use a Micro:bit to play a rock paper scissors style game. Adapt the game as appropriate.

5.1.4 Use an algorithm to program a Micro:bit to generate a random answer. Implement this by creating a Magic 8 ball

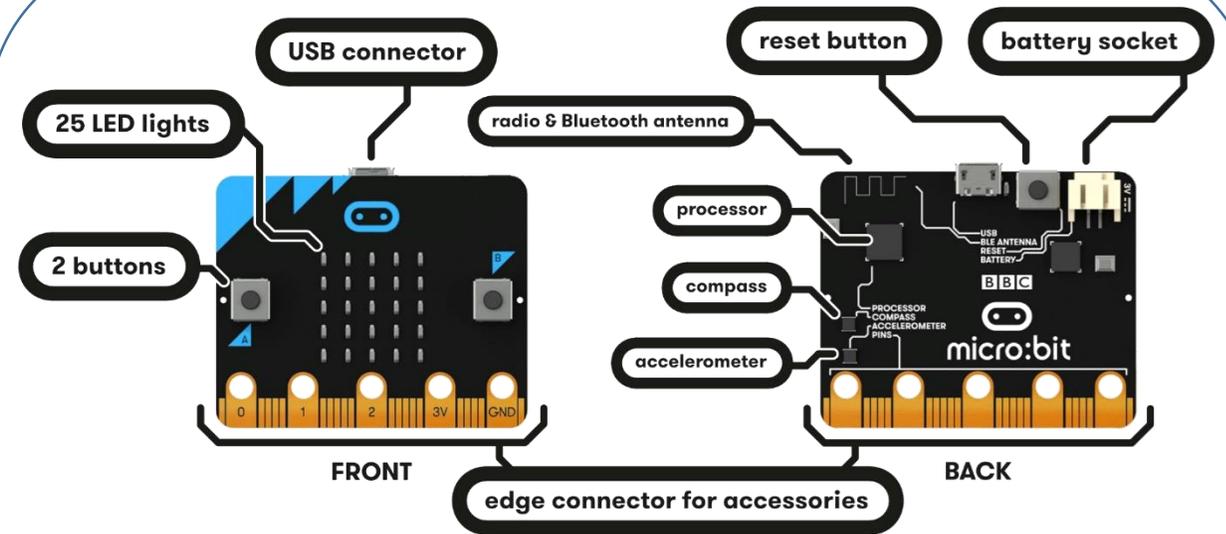
5.1.5. Understand how sensor technology is used to change the duties of a program to perform certain tasks.

5.1.6 Making a programme on a Micro:Bit to calculate the temperature. Adapting the program to include changes that will happen as a result.



Key vocabulary to define and learn:

Variable, Micro:bit, compass, Bluetooth, repetition, data, information, accelerometer, processor, USB, connector, execute.



In association with...



Websites and further reading:

BBC Micro:bit.org: <https://microbit.org/>

Coding key words glossary: <https://code.org/curriculum/docs/k-5/glossary>

Key topic 6: Computer theory

6.1 The impact of ICT on society;

- 6.1.1 ICT in the workplace – replacing typewriters / printed / written documents.
- 6.1.2 Documents sent by email,
- 6.1.3 Social networking,
- 6.1.4 Working from home (video conferencing)
- 6.1.5 Advantages and disadvantages of using ICT in the workplace.
- 6.1.6 Shopping online
- 6.1.7 Collecting information about customers
- 6.1.8 Accessing entertainment
- 6.1.9 Employment and environment

6.2 How ICT has changed communication and collaboration;

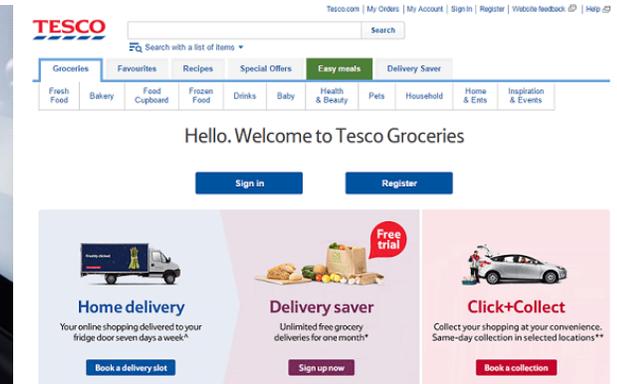
- 6.2.1 Email (CC, BCC)
- 6.2.2 Video conferencing
- 6.2.3 Online document editors

6.3 ICT; the law and ethics.

- 6.3.1 Introduction to computers use and the law
- 6.3.2 Computer misuse act; hacking, malware, viruses
- 6.3.3 Copyright, designs and patents act; licenses, downloading music, films and games legally / illegally.
- 6.3.4 the main principles of the GDPR replacing the data protection act

Key vocabulary and acronyms to define and learn:

GDPR, BCC, CC, Computer misuse act, copyright designs and patents act, video conferencing, downloading



Websites and further reading:

ICT – Law and Ethics: <https://www.bbc.com/bitesize/guides/z9nk87h/revision/1>

Computer misuse act: http://www.teach-ict.com/gcse_new/legal/cma/miniweb/index.htm

Subject: PE

Term: 5 and 6

Topic: Rounders Year 7

Key Skills

- Batting – forehand, backhand
- Fielding – throwing, catching, long barrier
- Bowling

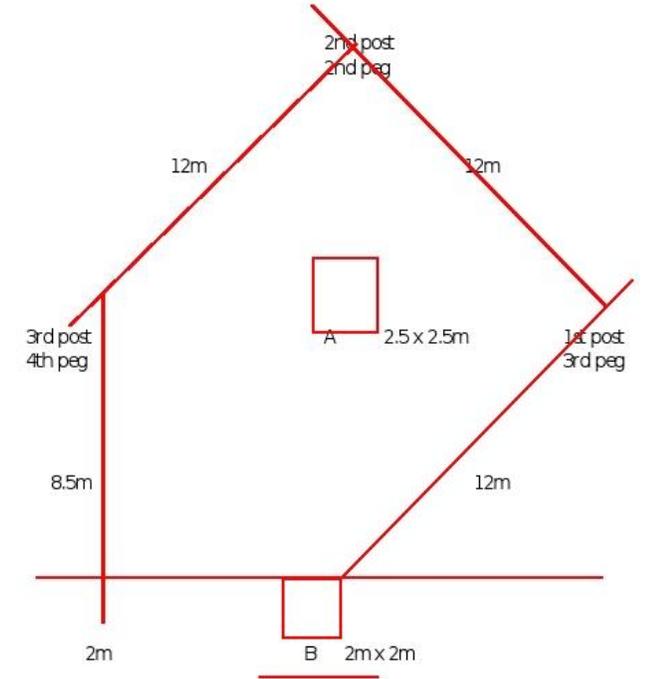


The Game of Rounders

Rounders is a striking and fielding game played between two teams of 9 players. The batter must strike at a good ball and attempt to run a rounder in an anti-clockwise direction around the first, second, and third base and home to the fourth, though they may stay at any of the first three. The aim of the batting team is to score as many rounders as they can in their innings whilst the fielding team try to stop them scoring or get them out. The winning team is the team with the most rounders after the allotted number of innings.

Leadership will be an integral part of the Year 8 curriculum for learners at WPS. Leadership might broadly be considered the behavioural process of influencing individuals and groups towards set goals. In sport and exercise, leadership includes; making decisions, motivating participants, giving feedback, establishing interpersonal relationships, and directing the group or team confidently. Leadership will be developed in Rounders through learners taking on different roles such as; coaches, umpires, motivators and organisers.

The Rounders Pitch



Websites, further reading and local information.

<http://www.roundersengland.co.uk/>

<http://www.simplerounders.co.uk/rules-of-the-game/>

<http://www.bbc.co.uk/sport/get-inspired/24066823>

Key Words

Batting



Fielding



Bowling



Long Barrier



Key Skills

- Throwing – Javelin, Shot Put, Discus.
- Jumping – Hurdles
- Running (short distance) – 100m, 200m, 400m, Relays.
- Running (long distance) – 800m, 1500m.
- Measuring – distances, times.

Websites, further reading and local information.

Rugby and Northampton Athletic Club - <http://randnac.org/>

Wayde Van Neikerk 400m World Record -
<https://www.youtube.com/watch?v=6n14GVVWKB0>

British Athletics - <https://www.britishathletics.org.uk/>

Tokyo 2020 - <https://www.olympic.org/tokyo-2020>

Athletics at Wootton Park School

Athletics will involve completing in a number of disciplines in throwing, jumping and running.

Learners will have the chance to compete against national data to see how well they are doing in each discipline. They will also have opportunities to set and break school records in each discipline.

Learners will also participate in a Sports Day at the end of year whereby they will participate in all events accumulating points for their House.

**Wayde Van Neikerk**

He is a South African track and field sprinter who competes in the 200 metres and 400 metres. He is the current world record holder, world champion and Olympic champion in the 400 metres, and also holds the world best time in the 300 metres.

In 2016 he became the first, and to date, only, sprinter in history to have run the 100 m in under 10 seconds, the 200 m in under 20 seconds and the 400 m in under 44 seconds.

Key Words

Leg drive

Arm drive

Measuring

Timing

Grip

Approach

Release

Subject: PE – Year 7

Term: 5 and 6

Topic: Cricket



WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Skills

- Batting – Drives, Pulls, Backing up, Stance, Flick, Sweep
- Bowling – Straight, Swing, Spin, Pace
- Fielding – Catching, Throwing, Positions, Communication
- Umpiring – Rules, Signals

Websites, further reading and local information.

The England and Wales Cricket Board - <https://www.ecb.co.uk/>

International Cricket Council - <https://www.icc-cricket.com/>

Northamptonshire CCC - <http://www.northantscricket.com/>

Cricket 24 - <https://www.cricket24.com/>

Cricket Rules - <http://cricket-rules.com/>

Top 10 Cricket Shots - <https://www.youtube.com/watch?v=JzwhEf0YBS8>

The Game of Cricket

The object of cricket is to score more runs than your opponent. There are three variations of the game (Test, One Day and Twenty 20) and each give a certain timescale in which the game must be completed.

To score a run you need to hit the ball with a cricket bat made from wood (usually English willow or Kashmir). Whilst one team bats the other bowls and fields. The aim is to bowl the opposing team out for as few runs as possible or restrict them to as few runs in the allocated time. After a team has lost all their wickets or the allotted time has expired then the teams will switch roles. A run occurs when a batsmen hits the ball with their bat and the two batsmen at the wicket manage to successfully run to the other end. The batsmen can run as many times as they like before being given out. If the ball crosses the boundary rope after it has bounced at least once from leaving the bat then 4 runs are given. If the ball goes over the boundary rope without bouncing then 6 runs are awarded to the batting team.



Joe Root

Joseph Edward Root (born 30 December 1990) is an English cricketer, who is the current captain of the English Test team. He also represents Yorkshire domestically. He was originally a right-handed opening batsman and occasional off-spinner, with a similar playing style to former England captain Michael Vaughan. However, he has played the majority of his cricket for England in the middle order. He fields predominantly at second slip or gully.

Key Words

Long Barrier

Fielding positions

Boundary

Overs

Line

Length

Off-side

Leg-side

Run

No-ball

Wide

Run-out

Innings

Subject: PE – Year 7

Term: 5 and 6

Topic: Softball

Key Skills

- Hitting – Grip, Hand Position, Stance, Stride, Swing, Contact, Follow-Through.
- Pitching – Grip, Stride, Rotation, Follow-Through.
- Fielding – Catching, Throwing, Positions.
- Umpiring - Rules

The Game of Softball

Softball is a variant of baseball played with a larger ball on a smaller field. It was invented in 1887 in Chicago, Illinois, United States as an indoor game. It was at various times called indoor baseball, mush ball, playground, softball, kitten ball, and because it was also played by women, ladies' baseball. The name *softball* was given to the game in 1926, because the ball used to be soft.

There are three types of softball. In the most common type, **slow-pitch softball**, the ball, which can measure either 11 or 12 inches in circumference depending on gender and league, must arch on its path to the batter, and there are 10 players on the field at once. In **fast-pitch softball**, the pitch is fast, there are nine players on the field at one time, and bunting and stealing are permitted.



Websites, further reading and local information.

Softball UK - <http://www.baseballsoftballuk.com/>

Rules of Softball -

http://www.baseballsoftballuk.com/uploads/_documents/Files/Rules/Beginners_Guide_Softball.pdf

Milton Keynes Softball - <https://www.mksoftball.co.uk/>

Softball Best Plays - https://www.youtube.com/watch?v=f6pNE-mT8_8

Jennie Finch

She is an American, former collegiate All-American and medal winning Olympian, retired 2-time pro All-Star, right-handed hitting softball pitcher and first baseman originally from La Mirada, California. She pitched for the Arizona Wildcats, the USA national softball team and the Chicago Bandits. She won the 2001 Women's College World Series and helped lead Team USA to the gold medal at the 2004 Olympics and a silver medal at the 2008 Summer Olympics. *Time* magazine described her as the most famous softball player in history.

Key Words

Fly Ball

Drive

Pop Fly

Base

Bunt

Foul Ball

Home Run

Obstruction

Steal

Tag