FDP equivalence

@whisto_maths
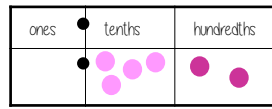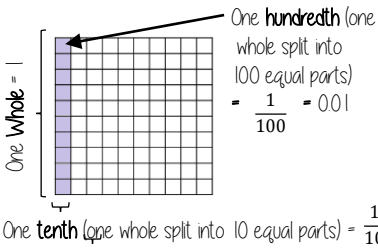
What do I need to be able to do?

By the end of this unit you should be able to:

- Convert fluently between fractions, decimals & percentages
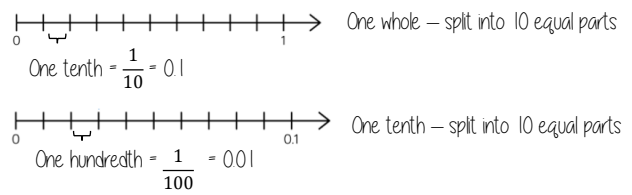
Keywords

Fraction: how many parts of a whole we have

Decimal: a number with a decimal point used to separate ones, tenths, hundredths etc.

Percentage: a proportion of a whole represented as a number between 0 and 100

Place value: the numerical value that a digit has decided by its position in the number

Placeholder: a number that occupies a position to give value

Interval: a range between two numbers

Tenth: one whole split into 10 equal parts

Hundredth: one whole split into 100 equal parts

Sector: a part of a circle between two radius (often referred to as looking like a piece of pie)

Recurring: a decimal that repeats in a given pattern
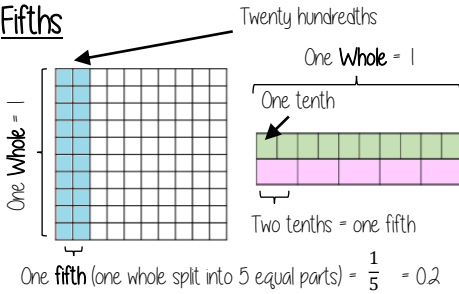
Tenths and hundredths

One **hundredth** (one whole split into 100 equal parts) = $\frac{1}{100}$ = 0.01

One Whole = 1

One **tenth** (one whole split into 10 equal parts) = $\frac{1}{10}$ = 0.1

ones • tenths | hundredths

0 ones, 5 tenth and 2 hundredths
0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01
= 0 + 0.5 + 0.02
= 0.52

On a number line
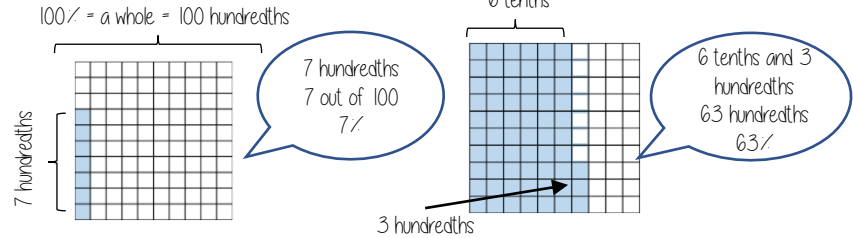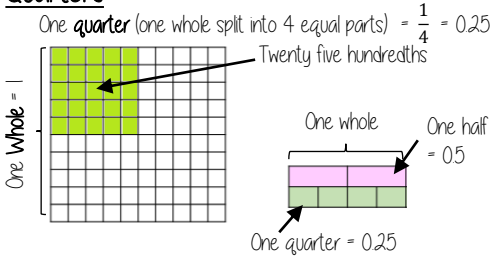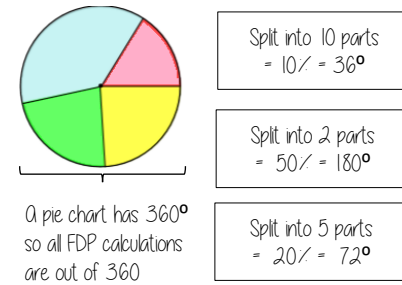
One whole – split into 10 equal parts

One tenth = $\frac{1}{10}$ = 0.1

One tenth – split into 10 equal parts

One hundredth = $\frac{1}{100}$ = 0.01

Fifths

Twenty hundredths

One Whole = 1

One Whole = 1

One tenth

Two tenths = one fifth

One **fifth** (one whole split into 5 equal parts) = $\frac{1}{5}$ = 0.2

Percentages on a hundred grid

100% = a whole = 100 hundredths

7 hundredths

7 hundredths
7 out of 100
7%

6 tenths

6 tenths and 3 hundredths
63 hundredths
63%

3 hundredths

Quarters

One **quarter** (one whole split into 4 equal parts) = $\frac{1}{4}$ = 0.25

Twenty five hundredths

One Whole = 1

One whole

One half = 0.5

One quarter = 0.25

Simple pie charts

Split into 10 parts = 10% = 36°

Split into 2 parts = 50% = 180°

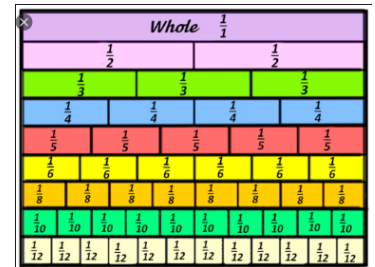Split into 5 parts = 20% = 72°

A pie chart has 360° so all FDP calculations are out of 360

Equivalent fractions

Represent equivalence with fraction walls

Whole	$\frac{1}{1}$		
$\frac{1}{2}$		$\frac{1}{2}$	
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$ $\frac{1}{5}$
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$
$\frac{1}{8}$			
$\frac{1}{10}$			
$\frac{1}{12}$			

Fractions – on a diagram

The denominator is represented by EQUALLY sized parts – this is split into quarters
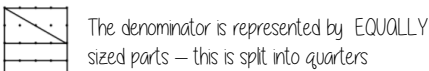
Fractions – on a number line

This point is at the 6th part
6 is the **numerator**

One whole split into 18 equal parts
18 is the **denominator**

$\frac{6}{18}$ ← $\frac{3}{9}$ ← $\frac{1}{3}$

Convert FDP

$\frac{70}{100}$

This also means
70 ÷ 100

70 out of 100 squares
70 "hundredths"
= 7 "tenths"
0.7

70 hundredths
= 70%

Using a calculator

■/□

S⟷D Convert to a decimal

This will give you the answer in the simplest form

× 100 converts to a percentage

Be careful of recurring decimals
e.g $\frac{1}{3}$ = 0.3333333
$\frac{1}{3}$ = 0.$\dot{3}$
The dot above the 3
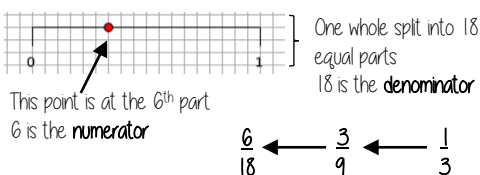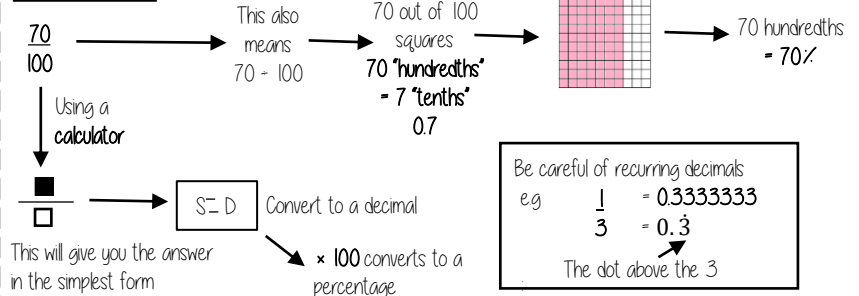
## Solving problems with addition and subtraction

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:
- Understand properties of addition/ subtraction
- Use mental strategies for addition/subtraction
- Use formal methods of addition/Subtraction for integers
- Use formal methods of addition/Subtraction for decimals
- Solve problems in context of perimeter
- Solve problems with finance, tables and timetables
- Solve problems with frequency trees
- Solve problems with bar charts and line charts

Keywords

Commutative: changing the order of the operations does not change the result
Associative: when you add or multiply you can do so regardless of how the numbers are grouped
Inverse: the operation that undoes what was done by the previous operation. (The opposite operation)
Placeholder: a number that occupies a position to give value
Perimeter: the distance/ length around a 2D object
Polygon: a 2D shape made with straight lines
Balance: in financial questions – the amount of money in a bank account
Credit: money that goes into a bank account
Debit: money that leaves a bank account

Addition/ Subtraction with integers
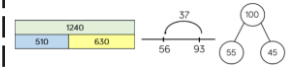
Modelling methods for addition/ subtraction
- Bar models
- Number lines
- Part/ Whole diagrams

Addition is commutative

$6 + 3 = 3 + 6$
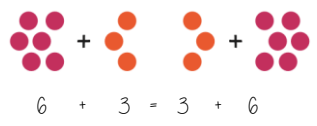
The order of addition does not change the result

Subtraction the order has to stay the same

$360 – 147 = 360 – 100 – 40 – 7$

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction
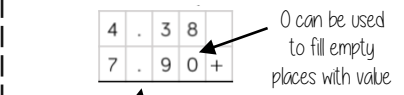- Show your relationships by writing fact families

Formal written methods

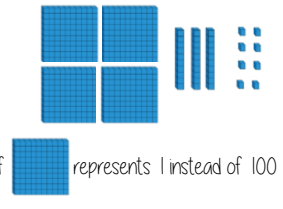| H	T	O
	1	8	7
+	5	4	2

H	T	O
	4	2	7
−	2	4	9

Remember the place value of each column. You may need to move 10 ones to the ones column to be able to subtract

Addition/ Subtraction with decimals

4	.	3	8
7	.	9	0	+

The decimal place acts as the placeholder and aligns the other values

0 can be used to fill empty places with value

If [square] represents 1 instead of 100
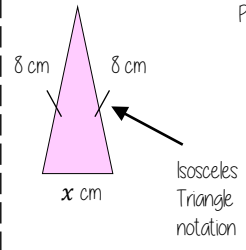
$5.43 + \frac{8}{10}$

Revisit Fraction – Decimal equivalence
$5.43 + 0.8$

Solve problems with perimeter

Perimeter is the length around the outside of a polygon

8 cm   8 cm

x cm

Isosceles Triangle notation

The triangle has a perimeter of 25cm. Find the length of x

$8cm + 8cm + xcm = 25cm$
$16cm + xcm = 25cm$
$xcm = 9cm$

Solve problems with finance

Profit= Income - Costs

Credit – Money coming into an account

Debit – Money leaving an account

Money uses a two decimal place system. 14.2 on a calculator represents £14.20

Check the units of currency – work in the same unit

Tables and timetables

Distance tables

London

211	**Cardiff**		
556	493	**Glasgow**	
518	392	177	**Belfast**

This shows the distance between Glasgow and London.
It is where their row and column intersects

Bus/ Train timetables

Harton	1005	1045	1130
Bridge	1024	1106	1147
Aville	1051	1133	1205
Ware	1117	1202	1233

Each column represents a journey, each row represents the time the 'bus' arrives at that location

TIME CALCUALTIONS – use a number line

Two-way tables

	H	T
H	HH	HT
T	TH	TT

Where rows and columns intersect is the outcome of that action.

Frequency trees

60 people visited the zoo one Saturday morning.
26 of them were adults. 13 of the adult's favourite animal was an elephant. 24 of the children's favourite animal was an elephant.

Adult: 26 → Elephant 13, Other 13
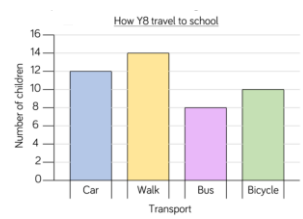60
Children: 34 → Elephant 24, Other 10
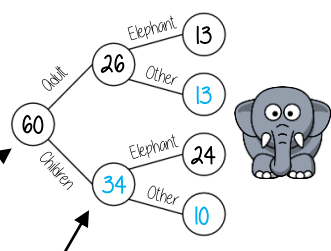
The overall total "60 people"

A frequency tree is made up from part-whole models. One piece of information leads to another

Probabilities or statements can be taken from the completed trees
e.g. 34 children visited the zoo

Bar and line charts

How Y8 travel to school

Use addition/ subtraction methods to extract information from bar charts.

e.g. Difference between the number of students who walked and took the bus.
Walk frequency – bus frequency

When describing changes or making predictions.
- Extract information from your data source
- Make comparisons of difference or sum of values.
- Put into the context of the scenario

Solving problems with multiplication and division

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:
- Understand and use factors
- Understand and use multiples
- Multiply/ Divide integers and decimals by powers of 10
- Use formal methods to multiply
- Use formal methods to divide
- Understand and use order of operations
- Solve area problems
- Solve problems using the mean

Keywords

Array: an arrangement of items to represent concepts in rows or columns

Multiples: found by multiplying any number by positive integers

Factor: integers that multiply together to get another number.

Mili: prefix meaning one thousandth

Centi: prefix meaning one hundredth.

Kilo: prefix meaning multiply by 1000

Quotient: the result of a division

Dividend: the number being divided

Divisor: the number we divide by.

Factors

Arrays can help represent factors

5 x 2 or 2 x 5

Factors of 10
1, 2, 5, 10

10 x 1 or 1 x 10

The number itself is always a factor

Square numbers have an **ODD** number of factors

Be strategic
- Lay factors out in pairs can help you not to miss any

Factors of 4
1, 2, 4

Factors of 36
1, 2, 3, 4, 6, 9, 12, 18, 36

Multiples

| 4 | 4 | 4 | 4 | 4 |

Bar models can represent by something is a multiple. Eg 20 is a multiple of 4

Lowest Common Multiples

LCM of 9 and 12

| 9 | 9, 18, 27, 36, 45, 54 |
| 12 | 12, 24, 36, 48, 60 |

The first time their multiples match

LCM = 36

9   18   27   36   45
12   24   36   48

Multiply/ Divide by powers of 10

| 100s | 10s | 1s | |×100| | 100s | 10s | 1s |

3 x 100 = 300

| 1s | 1/10 | 1/100 | |×100| | 1s | 1/10 | 1/100 |

003 x 100 = 3

Repeated multiplication and division by powers of 10 is commutative

÷ 10 then ÷ 10 ⟶ ÷ 100

Metric conversions

Useful Conversions

mm ⟶ cm ⟶ m ⟶ km   (÷ 10, ÷ 100, ÷ 1000 / × 10, × 100, × 1000)

g ⟶ kg   (÷ 1000 / × 1000)

ml ⟶ L   (÷ 1000 / × 1000)

Multiplication methods

H	T	O
	1	8	7
×			9

Long multiplication (column)

| × | 100 | 80 | 7 |
| 9 | | | |

Grid method

Repeated addition

Less effective method especially for bigger multiplication

Multiplication with decimals

Perform multiplications as integers
eg 0.2 x 0.3 ⟶ 2 x 3

Make **adjustments** to your answer to match the question: 0.2 x 10 = 2
0.3 x 10 = 3

Therefore 6 ÷ 100 = **0.6**

Estimations: Using estimations allows a 'check' if your answer is reasonable

Division methods

Short division

3584 ÷ 7 = 512

$$7 \overline{) 3\ ^3 5\ ^5 8\ ^1 4}$$ 5 1 2

Complex division

÷ 24 = ÷ 6 ÷ 4

Break up the divisor using factors

Division with decimals

The placeholder in division methods is essential – the decimal lines up on the dividend and the quotient

24 ÷ 0.02 ⟶ 24 ÷ 0.2 ⟶ 240 ÷ 2

All give the same solution as represent the same proportion.
Multiply the values in proportion until the divisor becomes an integer

Order of operations

Brackets
Indices or roots
Multiplication or division
Addition or subtraction

( )
² & √
× & ÷
+ & −

If you have multiple operations from the same tier work from left to right

eg 10 – 3 + 5 ⟶ 10 - 3 ⟶ 7 + 5

| 6 x 4 | + | 8 x 2 |
| 24 | + | 16 | = 40 |

Area problems

Rectangle
Base x Perpendicular height

Parallelogram/ Rhombus
Base x Perpendicular height

Triangle
½ x Base x Perpendicular height

A triangle is half the size of the rectangle it would fit in

Mean problems

Mean – a measure of average
It gives an idea of the central value

Lilly, Annie and Ezra have the following cubes

Lilly
Annie
Ezra

24 in total

Finding the mean amount is the average amount each person would have if shared out equally

Lilly   Annie   Ezra

The mean number of blocks would be 8 each

Fractions and percentages of amounts

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:
- Find a fraction of a given amount
- Use a given fraction to find the whole or other fractions
- Find the percentage of an amount using mental methods
- Find the percentage of a given amount using a calculator

Keywords

Fraction: how many parts of a whole we have
Equivalent: of equal value
Whole: a number with no fractional or decimal part.
Percentage: parts per 100 (uses the ∕ symbol)
Place Value: the value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right
Convert: change into an equivalent representation, often fraction to decimal to a percentage cycle.

Fraction of a given amount

Find $\frac{2}{5}$ of £205

The bar represents the whole amount

£205

| £41 | £41 | £41 | £41 | £41 |

2 out of the 5 equal parts
2 x £41 = **£82**

£205 ÷ 5 = £41
Each part of the bar model represents £41

90

| 30 | 30 | 30 |

| 15 | 15 | 15 |

45

Use bar models for comparisons
$\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 45 = 30

∴ $\frac{1}{3}$ of 90 = $\frac{2}{3}$ of 45

Use a fraction of amount

$\frac{2}{3}$ of a value is 70. What is the whole number?

70

| 35 | 35 | 35 |

70 ÷ 2 = 35
Each part of the bar model represents 35.

35 x 3 = 105
The whole number is 105

The wording of the question is important to setting up the bar model

63

| 21 | 21 | 21 | 21 |

$\frac{3}{4}$ of a number is 63.

What is $\frac{1}{6}$ of the number?

= 14

Find the whole

84

| 14 | 14 | 14 | 14 | 14 | 14 |

Use the whole to find a given part

Find the percentage of an amount (Mental methods)

The **whole** represents 100%

| | | | | | | | | | |

10% = $\frac{1}{10}$ of the whole

0%   20%   40%   60%   80%   100%

10% = $\frac{1}{10}$ of the whole   50% = $\frac{5}{10}$ = $\frac{1}{2}$ of the whole

20% = $\frac{2}{10}$ = $\frac{1}{5}$ of the whole   5% = $\frac{1}{20}$ of the whole

Find 65% of 80

80

| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

For bigger percentages it is sometimes easier to take away from 100%

Method 1:
65% = 10% x 6 + 5%
= (8 x 6) + 4
= 52

Method 2:
65% = 50% + 10% + 5%
= 40 + 8 + 4
= 52

Find the percentage of an amount (Calculator methods)

Using a multiplier
Find 65% of 80

Fraction, decimal, percentage conversion

65% = $\frac{65}{100}$ = 0.65 ← The multiplier

0.65 x 80 = **52**

Using the percent button
Find 65% of 80

Type 65
Press [SHIFT] [( ] (%)
Press [X] 80 and then press =

This brings up the ∕ button on screen
You will see 65∕

You can also use the calculator to support non calculator methods and find 1% or 10% then add percentages together

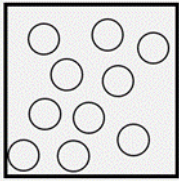"of" can represent 'x' in calculator methods

Year 7 Science Knowledge Organiser – Elements, Atoms & Compounds

Key Vocabulary:

1	**Atom**	The smallest particle of an element that can exist.
2	**Condensing**	A physical process that results in the change of state from a gas or vapour to a liquid.
3	**Compound**	A compound is a substance that contains two or more elements chemically bonded together.
4	**Corrosive**	Has the potential to seriously damage skin or surfaces. *The **corrosive** liquid burned through the bench.*
5	**Element**	A substance made up of only one type of atom. *Oxygen is an **element**.*
6	**Flammable**	Will set on fire easily.
7	**Matter**	Any substance which takes up space and has mass. *All the chemicals were made of **matter**.*
8	**Molecule**	A small group of non-metal atoms chemically joined together *There are millions of **molecules** of water in a swimming pool.*
9	**Malleable**	Can easily be shaped.
10	**Particle**	A tiny portion of matter.
11	**Periodic Table**	A table which orders all of the known chemical elements.
12	**Sonorous**	Makes a ringing sound when struck.
13	**State**	Short for 'state of matter'. The states of matter are solid, liquid and gas. *The **state** of water at room temperature is liquid.*
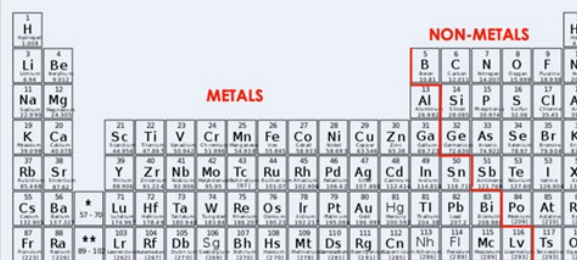
Elements & Periodic Table

14. Elements

1. All substances are composed of atoms
2. Elements are made from only one type of atom.

e.g. this diagram shows an element because it is made from only one type of atom.

3. There are about 100 different elements
4. An atom is the smallest part of an element that can exist
5. Elements have specific physical and chemical properties.
6. Physical properties = state, appearance, smell, magnetic, etc.
7. Chemical properties = what it reacts with and how reactive it is

15. Periodic Table

8. Elements are organised in the Periodic Table
9. The Periodic Table is organised into periods and groups
10. Groups are vertical columns
11. Periods are horizontal rows
12. Elements in a group have similar chemical properties
13. Metals are on the left hand side of the 'staircase' and non-metals are on the right hand side of the 'staircase'.

16. Hazard Symbols

Compounds and formulae

17. Compounds

14. Compounds are formed from elements by chemical reactions
15. Chemical reactions always involve the production of one or more new substances

e.g. in the diagram below there are two elements that when they react together, make a new compound
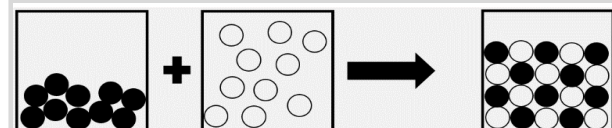
liquid element   gas element   solid compound

16. A compound contains two or more elements chemically joined together in fixed proportions
17. A compound has different properties from the elements it's composed
18. Compounds can only be separated into elements by chemical reactions
19. A molecule is two or more non-metal atoms chemically joined together – this can be an element (e.g. H_2) or a compound (e.g. H_2O)

18. Naming compounds

20. There are rules to follow when naming compounds:
a. Usually the metal goes first and the non-metal goes second
b. If a metal and a non-metal react, the name of the non-metal ends in –ide
c. For some compounds, if there are a different number of atoms we add in 'mono' for 1, 'di' for 2 and 'tri' for 3
d. If the compound names ends in –ate then it usually contains three elements, including a non-metal and oxygen

19. Chemical formulae

21. Each element is represented by a chemical symbol.
e.g. Iron = Fe, oxygen = O, magnesium = Mg, gold = Au

22. The chemical formula of a molecule or compound tells you which elements and how many atoms of each are in one molecule
23. The small subscript number after an element symbol is the number of atoms of that element are in one molecule

e.g. In HNO_3 there is 1 atom of hydrogen, 1 atom of nitrogen and 3 atoms of oxygen per molecule.

Year 7 Science Gravity

Key Vocabulary:

1	**Accelerate**	When an object changes speed or direction.
2	**Asteroid**	A small, rocky object that orbits the Sun (smaller than planets).
3	**Astronaut**	A person who is travels or is trained to travel in space in a spacecraft.
4	**Attract**	When one object pulls another towards it.
5	**Contact Force**	A force that requires objects to be directly touching in order to have an effect.
6	**Eclipse**	When light to an object in space is blocked by another object.
7	**Galaxy**	A system of millions if stars, gas and dust, held together by gravity.
8	**Gravity**	The attractive non-contact force between all objects with mass.
9	**Gravitational Field Strength**	The force exerted per unit of mass (a measure of how 'strong' the gravity is.
10	**Lightyear**	The distance light can travel in one year.
11	**Mass**	The amount of matter in an object.
12	**Non-Contact Force**	A force that doesn't require objects to be directly touching in order to have an effect.
13	**Orbit**	The curved path of one object around another, usually a planet, moon or satellite.
14	**Satellite**	An object in space that orbits a planet.
15	**Universe**	All of space and time, including planets, starts, galaxies and all matter and energy.
16	**Weight**	The force of gravity acting on a mass.

17   Gravity

- Gravity can also be called **gravitational force.**
- **Gravitational forces act *on* and *between* all objects.**
- Gravity is a **non-contact** force.
- Non-contact forces have a force field that **weakens** with **distance.**
- The gravitational field strength decreases with distance.
- The gravitational field strength increases with mass.

18   Weight and Mass

- The unit of mass is kilograms (kg).
- Mass stays the same everywhere.
- **Weight** is the force of gravity acting on a mass.
- The unit of weight is Newtons (N).
- Weight = mass x gravitational field strength
   (N)   (kg)   (N/kg)

19   Space and Gravity

- Gravity is the force that holds objects in orbit.
- An orbit is the curved path of an object in space around another object in space.
- There are many billions of **galaxies** in the universe.
- Our solar system is a tiny part of one galaxy.
- The Universe is so large that distances are described in lightyears.
- A lightyear is the distance that light can travel in 1 year.

20   The Solar System

- Our solar system contains lots of objects including the sun, planets, satellites, asteroid belts and comets.
- The **sun** is the star at the centre of our solar system.
- The **planets** orbit the sun.
- The planets are in the order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

21   Satellites

- The **satellites** orbit planets, asteroid belts and comets.
- A natural satellite is a moon which orbits a planet.
- Artificial satellites include those that orbit the Earth for communication.

22   Day and Night and Seasons

- It takes the Earth **365 days** to orbit the sun once. This is a **year.**
- Planets rotate on their axis which produces day and night.
- The Earth rotates once every 24 hours.
- The seasons are caused because the Earth is tilted on an axis at 23.5°C.
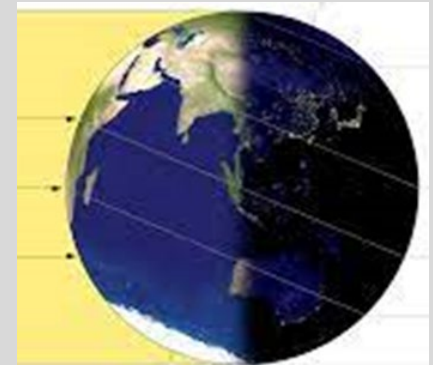
23   Eclipses

- An eclipse is when the light to an object in space is blocked by another object.
- There are two types of eclipses; a solar eclipse and a lunar eclipse.
- A **solar eclipse** happens when light from the Sun is blocked from reaching parts of Earth. This happens when the **moon comes between** the sun and the Earth.
- A **lunar eclipse** happens when light from the Sun is blocked from reaching the moon by the Earth when the **Earth comes between** the moon and the sun.

Keywords

Geometric - Geometric shapes are shapes made out of points and lines including the triangle, square, and circle.

Collage - Collage describes both the technique and the resulting work of art in which pieces of paper, photographs, fabric and other materials are arranged and stuck down onto a supporting surface, such as paper.

Vibrant – Bright and strong, often describes a colour.

Ensemble – A collection of parts or details.

Tribal - Tribal art is the visual arts and material culture of indigenous peoples. It is also known as non-Western art or ethnographic art.

Structure - Structure relates to the arrangement and mutual relation of the objects within a piece of art. It is similar to the composition.

Kris Tate

- She was born in the city of Guatemala
- Animals and her native culture inspired her to start creating art.
- She studied Art and Graphic Design in Guatemala.
- She moved to the UK and is now working. Her works have become part of Urban Outfitters a clothes shop.
- She uses black outline to make her work look 3D.
- She adds intricate patterns onto her shapes to add detail.
- She uses bright, bold and vibrant colours.
- Her work is usually in structured columns.
- The shapes she adds are geometric.
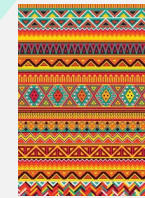
History of Sgraffito

Given that the word sgraffito is derived from the Italian word *graffiare* meaning 'to scratch,' the technique did indeed begin in Italy and dates back to around the 15th or 16th century.

Sgraffito played an important part in Rome during the Renaissance period and was frequently used by the famous artist Caravaggio and his partner Maturino da Firenze.

The artists first started using sgraffito on the exterior of buildings, using it to create incredibly detailed frescos on housing and palace facades.
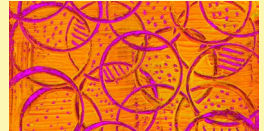
Sgraffito Technique = To scratch

Step 1: Add different colours using oil pastel on to your paper.

Step 2: Then cover the page with a black oil pastel. Make sure that you add an even layer of black so that no colour is showing.

Step 3: Using a sharp pencil or pen 'SCRATCH' in Aztec patterns.

Collage

Collage describes both the technique and the resulting work of art in which pieces of paper, photographs, fabric and other ephemera are arranged and stuck down onto a supporting surface.

Year 7 HT3 Drama Knowledge Organiser

Summary of topic
Through exploration the students understand the differences of Victorian education to school today. They also start explore the famous text Oliver Twist and understand the hardship faced during the Victorian period.

Aims of the topic
To be introduced to the historical period of the Victorians, play a Victorian character and to explore the famous text of Oliver Twist.

The Victorians/ Oliver Twist Y7 Knowledge Organiser

Lighting Terminology

Types of Lanterns-

Profile Spotlight- A focussed beam of light to highlight one specific area of the stage

Flood- A light that illuminates a wide area of the stage

Parcan- A powerful, bright beam of light with an unfocussed outline

Fresnel- An adaptable light which size can be increased or decreased by focussing the beam or using barn doors

Follow Spot- A strong spotlight that can be moved to follow the action on stage

Strobe Light- A light that constantly flashes to create a slow motion or non naturalistic effect

Staging

Arena stage
Audience
Stage

Proscenium theatre
Stage
Apron
Audience

Thrust stage
Stage
Audience

Traverse
Stage
Audience

Theatre in the round
Stage
Audience
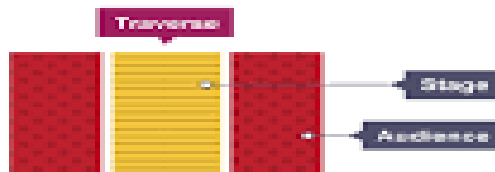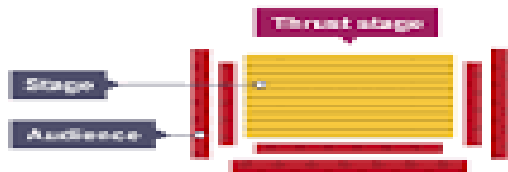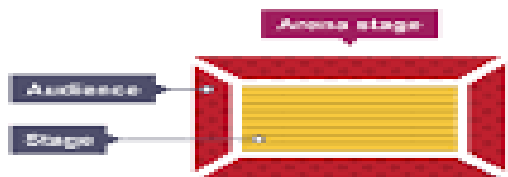
- Sub-text
- Props
- Staging
- Analysis
- Character motivation

- Lighting
- Accent
- Rehearsal techniques

Colour Connotations

red	orange	yellow	green	blue
Love, passion, heat, joy, power, failure	Change, warmth, healthy, sociable, earthy	Happy, joy, cheerful, optimistic, positive	Nature, growth, nurturing, stable, harmony, money, success	Calm, loyal, conservative, strength, intelligence
caution Has negative connotations in some cultures	Can overstimulate the eye, especially bright orange	Difficult to project or see on monitors	Avoid using with reds and browns	Can appear fuzzy next to or on top of black

purple	grey	white	black	brown
Wisdom, sophisticated, spiritual, royalty, creativity	Independence, sophisticated, neutral, modern	Neutral, calm, purity, innocence, clean, inviting	Conservative, serious, mysterious, sophisticated	Earthy, wholesome, simple, friendly
caution Can be perceived as too exotic for business	May be perceived as non-committal	Can convey sterile, stark or cheap	Can be difficult to see if overused	May be perceived as too casual

Data and **information** are not the same.
· **Data**: facts and figures in their raw form
· **Information**: data that has been given structure or meaning

For example:
Data—10, 2107, 18
Information—Time 10am, date 21st July, temperature 18°

The tool bar ribbon at the top allows for **formatting** of the data. Changing colour, size, style etc

There is a **sort** and **filter** tool that allows for data to be arranged in ways that is most useful for the user e.g. alphabetical, highest, lowest etc.

Conditional formatting can be set to allow the cell **formatting** to **automatically** change if certain criteria is met. For example a cell might turn red if there was a negative number

In order to complete calculations spreadsheets make use of **formula**.
A formula uses the following basic symbols
The **=** symbol is always at the start of a formula
The **+** symbol is used for addition
The **-** symbol is used for subtraction
The ***** symbol is used for multiply
The **/** symbol is used for divide

Functions are also used which are predefined formula.

Formula bar

Cell reference G7

Column— runs down a sheet assigned a letter

Row— runs across the sheet assigned a number

sheets—Individual pages in a workbook
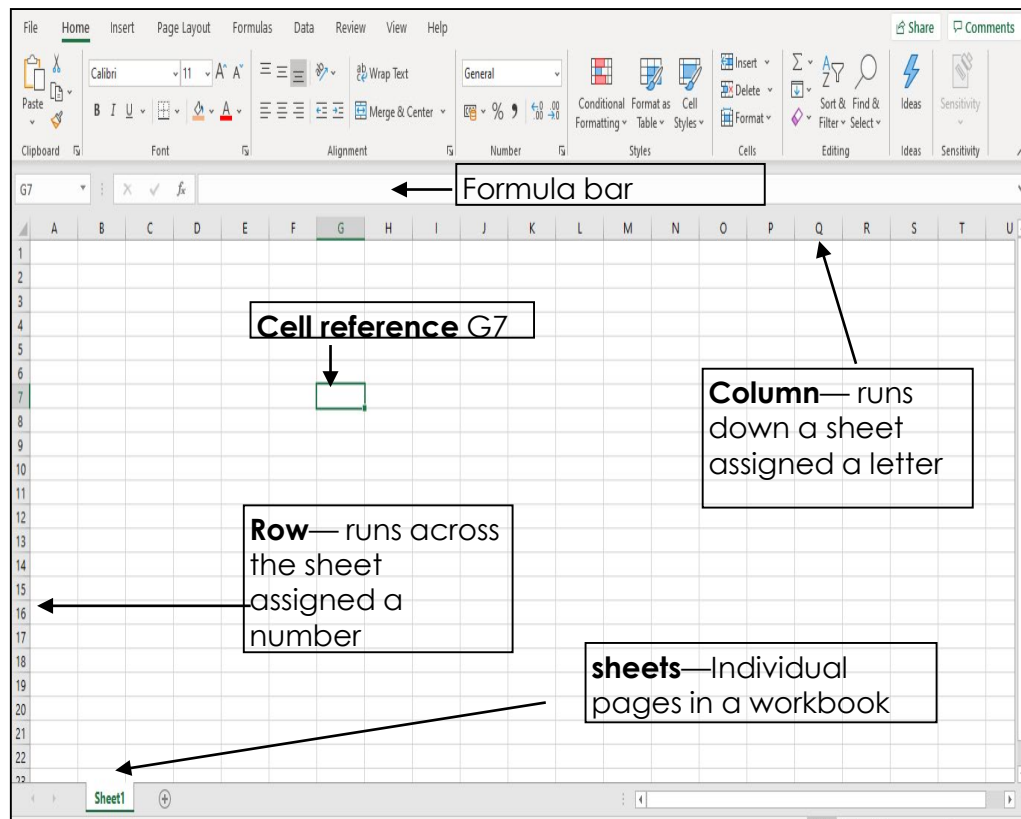
Common **functions** are
SUM—adds a range of cells
MAX—returns the largest value from selected cells
MIN—returns the smallest value from selected cells
AVERAGE—provides the arithmetic mean (average) of selected cells
COUNTIF—counts the number of cells in a range that meet the given criteria
IF— allows logical comparisons

Data can be gathered from different sources
· **Primary** source: collecting data yourself
· **Secondary** source: someone else collects the data

Each box on a spreadsheet is called a **cell** and they hold data.
Each **cell** has a unique **cell reference** to identify its location.

Dance

Knowledge

Explore movements, stylistic features, actions, space and dynamics in dance. Action steps and co-ordination (travel, step, turn, balance, stillness) performance skills (projection and facial expressions) musicality (tempo, speed and timing) jumping. Stretching, bending

Skills

Explore movements, stylistic features, actions, space and dynamics in dance.

Key Words

Stylistic Features – How a dancer or dancers, executes the different dance genres, and their own specific style qualities.

Dynamics – How the dancer moves e.g. fast/ slow, sudden/ sustained

Resilience – The capacity to recover quickly from difficulties; toughness.

Role model – Someone who is worthy of imitation – like your beloved teacher or a well behaved celebrity.

Reflection – Serious thought or consideration.

Knowledge
Lindy hop

The Lindy Hop is an American dance which was born in the African-American communities of Harlem, New York City, in 1928 and has evolved since then. It was very popular during the swing era of the late 1930s and early 1940s. Lindy is a fusion of many dances that preceded it or were popular during its development but is mainly based on jazz, tap, breakaway, and Charleston. It is frequently described as a jazz dance and is a member of the swing dance family.

The first dances named as Lindy Hop were born around the time the aviator Charles Lindbergh made his ground breaking flight across the Atlantic Ocean in May 1927. The most famous Lindy Hop dance, which is not connected to the other Lindy Hop dances, was born in the Harlem dance marathon in 1928 where George Snowden and Mattie Purnell reinvented the breakaway pattern by accident.

Skills- steps
Twist Around (for two 8 counts)
Double Break
Break & Hold with Pecking
"Duck" – Swingout from Closed with Leader's Duck
Promenade
Promenade
Flip Flop
Rhythm Break Forward

LINDY HOP
VectorStock®   VectorStock.com/2819198

Year 7 PE Knowledge Organiser- Orienteering

The main aim of orienteering is to complete the set course by finding control markers in the correct order in the shortest time.

Skills and Techniques

Orienteering is a sport that require **navigational skills** using a **map and compass** to **navigate** from point to point in **diverse** and often unfamiliar **terrain** whilst moving at **speed.** Participants are given a **topographical map**, usually a specially prepared orienteering map, which they use to find **control points**.

Running activities: All lessons start with running activities to encourage pace and speed. Cardiovascular fitness is required over different types of terrain.

Observing surroundings: Look at your surroundings (playground/ cage/ grass areas/ tree) and identify key features that help you find your precise location. You need to observe your surroundings before looking for markings on a map.

Orientating a Map. You need to orientate your map (move it) to line up with the key features on the ground and check it is the correct way round to the direction you are facing.

Directions: - understand the Cardinal Markers – North, South, East and West and their relation to features on the ground and to places beyond the school site.

Map Reading – Recognise symbols on a map, be able to use a key to recognise symbols and colours on an orienteering map.

Human features: Know that a human feature is influenced by man (buildings, benches, fences, walls)

Physical Features: Know that a physical feature is natural (rivers, beaches, hills, forests)

tarmac	
soft surfaces	
mown grass	
rough grass	
new trees	
sand	
bushes	
pond	
garden	
out of bounds	
slope	
path	
ditch	
steps	
fence, gate	
high fence	
tree	
tree root stock	
building, canopy	
seat, post	

Key words

Orienteering,   Location, Speed,
Cardiovascular Fitness,   Setting a Map,
Navigation,   Diverse Direction,
Key,
Cardinal Markers,   Terrain Map
Compass,
Control point

Rules:

Although it Is based on accurate map reading it is also a test of physical fitness.

You must find all the controls you are told to visit and record them on your score sheet.

You have to consider the terrain you are moving over ensuring your safety and the safety of any team members at all times, taking into account the varying fitness level of all your team members.

35,000 BC   **3,000 BC**   **2,000 BC**   **1,000 BC**   **1**   **1000**   **2000**

Adjective:	A word which describes a noun
Adverb:	A word which describes a verb
Anthropomorphism:	the attribution of human characteristics, emotions, and behaviours to animals
Complex sentence:	consists of a main clause plus one or more subordinate clauses.
Compound sentence:	Has two main clauses, joined by a co-ordinating conjunction.
Connotations:	The links or associations you have with a word
Fable:	a short story, typically with animals as characters, conveying a moral.
Figurative Language:	refers to words or phrases that are meaningful, but not literally true
Freytag Pyramid:	dramatic structure outlining the seven key steps in successful storytelling.
Juxtaposition:	Opposing or contrasting ideas nearby each other in a text
Metaphor:	A comparison between things to say something is something else.
Moral:	A lesson that can be derived from a story or experience.
Myth:	A traditional story, especially one concerning the early history of a people or explaining a natural or social phenomenon, and typically involving supernatural beings or events.
Oral tradition:	The stories that a group of people share by telling stories and talking to each other.
Personification:	Giving an object or thing human qualities
Pronoun:	A word which replaces a noun (e.g. I, she, he, it, they, we, you)
Prosody:	The musical quality of speech, like stress, rhythm, and intonation.
Simple sentence:	Contains only one main clause. It must have a subject and a verb, and may have an object.
Simile:	Figurative language: making a comparison by saying something is *like* something else (e.g. the stars are *like* diamonds)
Symbolism:	when one object or thing stands in the place of something else, such as an idea, another object, a person, or a place
Tone:	The mood or emotion of the text
Verb:	An action or a doing word

Tenses-Present

AVOIR = to have	
J'ai	I have
Tu as	You have
Il/ Elle/ On a	He/She/It has
Nous avons	We have
Vous avez	You all have
Ils/ Elles ont	They have

PORTER = to wear	
Je porte	I wear
Tu portes	You wear
Il/Elle/On porte	He/She/It wears
Nous portons	We wear
Vous portez	You all wear
Ils/Elles portent	They wear

Opinions & Pronouns

J'aime

J'aime beaucoup

Je n'aime pas

Je n'aime pas du tout

J'adore

Connectives

- **Aussi= also**
- **Et= and**
- **Mais= but**
- **Ce pendant = however**
- **Parce que = because**

Adjectives

Bleu(e)	Blue
Marron	Brown
Verte	Green
Gris(e)	Grey
Noir(e)	Black
Raides	Straight
Bouclé(s)	Curly
Ondulé(s)	Wavy
Longs	Long
Court	Short
Mi-longs	Mid length
Chauve	He/she is bald

J'aimerais avoir= I would like to have
J'ai les yeux… = I have… eyes
J'ai le cheveaux… = I have… hair
J'ai rousse = I am a red-head

Rivers Knowledge Organiser

Water cycle
- The water cycle is powered by changes in temperature from the sun, and fuels our entire planet
- The water cycle is made up of three main processes – evaporation, condensation, and precipitation
- **Evaporation** happens when the heat from the sun warms surface water – in the form of lakes, rivers, oceans, and runoff from rain – and turns it into water vapour
- **Transpiration** is when water inside plants is turned into water vapour through the same process
- **Condensation** is when the water vapour begins to cool as it rises. As this happens, tiny water droplets come together to form clouds
- **Precipitation** is the rain, snow, sleet, or hail that falls when these water droplets cool enough to turn back into a liquid or a solid
- Water then returns to the ocean as **throughflow** (water that has absorbed into and moves through the soil), **groundwater flow** (water that has soaked below the soil and deep into the earth), or s**urface runoff** (water that runs over the top of soil and rocks).
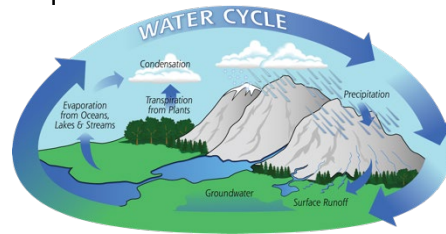
River features
Source – the place where a river begins, usually a marsh or bog
Marsh – an area that floods frequently, where the land is usually wet
Tributary – small rivers that join a larger river
Confluence – the point at which two rivers meet
Floodplain – the land where a river floods
Mouth – the point where a river meets the sea
Estuary – a point at the mouth of a river where it meets the tide from the ocean/ sea and the freshwater and saltwater mix
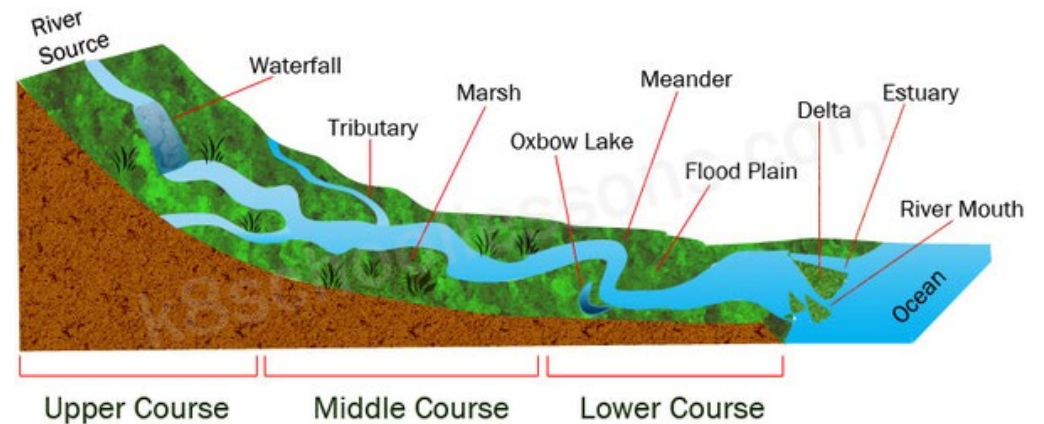
River processes

Erosion
- **Hydraulic action** — as water rushes by, it forces air into cracks in the rock, which continue to widen and break
- **Abrasion** — sand and rock are thrown against the riverbed and banks, wearing them away like sandpaper
- **Attrition** — pieces of rock are thrown against each other, causing sharp edges to break off and eventually becoming smaller and rounder
- **Corrosion** — weak acids in the water break down the rock in the riverbed and banks

Transportation
- **Traction** — large stones are rolled along the riverbed
- **Saltation** — smaller stones bounce along the riverbed over one another
- **Suspension** — small particles of rock, dirt, and plants float in the water of a river, making it look cloudy
- **Solution** — particles of rock and chemicals are dissolved and carried along in the water unseen

Deposition
Rivers **deposit** (drop) eroded material as they lose speed when:
- the river becomes shallower
- the amount of water is reduced
- the amount of material being carried increases
- the river reaches its mouth
They do this because they no longer have the **energy** to carry it.

Rivers Knowledge Organiser

River landforms

Upper course

V-shaped valleys – steep valleys that are formed as the river erodes the land it passes over; they are v-shaped because the land

Waterfalls – steep drops formed by uneven rates of erosion as rivers pass over differing bands of hard and soft rock
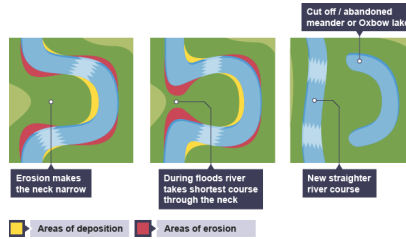
Middle course

Meanders – bends in the river that are made more extreme as water flows more forcefully around the outside bend, eroding the riverbank further there and leading to deposition around the inside bend

Ox-bow lakes – when a meander bends so much that the river takes a short cut and leaves part of the meander cut off from the rest of the river

Levees – steep banks built up along a river intentionally or as a result of material being deposited on the banks during flooding

Lower course

Deltas – material that is deposited and builds up at the mouth of a river

Cut off / abandoned meander or Oxbow lake

Erosion makes the neck narrow · During floods river takes shortest course through the neck · New straighter river course

☐ Areas of deposition   ☐ Areas of erosion

Factors affecting flooding

Natural

Heavy rain — when it rains very heavily the water doesn't have time to soak into the soil, so it runs over the ground, causing flooding

Soggy soil — when soil is already holding a lot of water, it can't absorb any more

Tributaries — the more a river has, the higher the risk of flooding due to all the extra water

Steep slopes — water flows faster down steep slopes, meaning it doesn't have time to soak into the soil

Impermeable rock — some areas have **impermeable** rock (water cannot pass through) just below the soil, so water can't soak down

Human

Deforestation — leaves can catch rainwater (called **interception**) and tree roots take up a lot of water from soil; when there aren't any trees in an area this cannot happen

Built-up areas — rain can't soak through concrete, so it is carried away by drains and quickly returns to the river; if drains are blocked street can flood quickly even if they are not near a river

River management

Rivers are constantly changing. For humans to live near and utilize rivers they must be managed. Ways of managing rivers can use **hard engineering** (using man-made structures) or **soft engineering** (using parts of the environment in a more natural approach).

Hard engineering
- Dams
- River barriers
- Levees/ embankments
- Overflow channels

Soft engineering
- Afforestation (planting trees)
- Dredging
- Managed flooding

Case Study: Flooding in the UK

In January 2014 the county of Somerset in southwest England flooded. Different people and groups had many ideas about the **cause** of the flooding. People were also upset about many different **effects**. In the table below are some of these causes and effects.

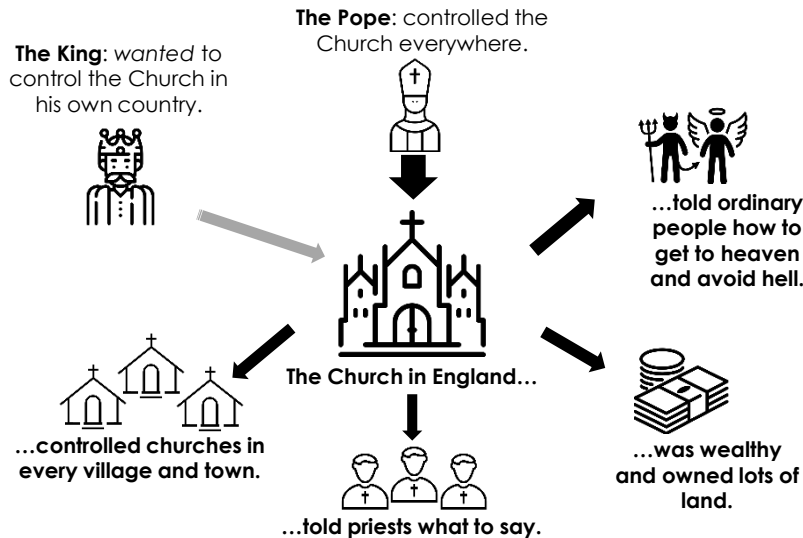| Causes	Effects
- Heavy rainfall - Soggy soil - Deforestation - More compact soil from farming - Not dredging the river enough (clearing it of plants and other material in the bottom) - Urbanisation (towns and cities being build where the river would naturally flood)	- People displaced (evacuated from their homes) - Rebuilding costs - Costs to farmers (crops were ruined, livestock died) - Disruptions to services like healthcare, education, and transportation - Floods can restore nutrients to soil, lakes, and rivers

Year 7 History Term 2 Knowledge Organiser: The Church Vs The King

Kings of England 1066-1216

1066-1087	William I
1087-1100	William II
1100-1135	Henry I
1135-1154	Stephen & Matilda
1154-1189	Henry II
1189-1199	Richard I
1199-1216	John

The Power of the Medieval Church

The King: *wanted* to control the Church in his own country.

The Pope: controlled the Church everywhere.

The Church in England…

…told ordinary people how to get to heaven and avoid hell.

…controlled churches in every village and town.

…told priests what to say.

…was wealthy and owned lots of land.

POPE	The ruler of the Catholic Church, who lived in Rome.
THE CHURCH	The whole organisation of priests and churches, ruled over by the Pope.
CATHOLIC	A type of Christianity, ruled by the Pope. Most Christians in the Medieval periods were Catholics.
ARCHBISHOP	An important person in the Church, below the Pope but above priests. The Archbishop of Canterbury is the most important person in the Church in England.
PRIEST	A person who works for the Church to lead prayers and religious services.
CATHEDRAL	A large and important church.
MARTYR	Someone who dies or is killed for their beliefs.
MONARCH	A king or queen.
TAX	Money that people have to pay to the government.
TYRANT	A powerful person who rules cruelly or harshly.
MAGNA CARTA	The 'Great Charter'. A document that sets out rules for Kings to follow.
CONSTITUTION	A set of rules that sets out how a country is run.
INTERPRETATION	A opinion or version of past events, based on evidence.

TIMELINE OF MEDIEVAL POWER

| Thomas Becket made Archbishop of Canterbury. 1162 | Thomas Becket murdered at Canterbury Cathedral. 1170 | King John made King of England. 1199 | Magna Carta signed at Runnymede. 1215 |

RE 7.3 What is the purpose of this life?

Key terms

1. **Afterlife –** A life that some people believe begins when you die.
2. **Judgment –** To have a decision made by God about how good you have Been.
3. **Allah –** The name of the Islamic God.
4. **Five Pillars of Islam –** Five ways Muslims can practise to be a good Muslim.
5. **Muhammad –** The founder of Islam.
6. **Ummah –** Community
7. **Qur'an –** Islamic Holy Book
8. **Calligraphy** – Islamic art that uses Arabic symbols.

Crucial Commands:

Describe: Say in detail what something or someone is like, and the impact it has. E.g. Describe rites of passage in Judaism.

Explain: Say why something or someone is important, and the impact it has. E.g. Explain why Moses is important.

Discuss: Write about at least two points of view and explain why these points of view are valuable or not. E.g. ""Yom Kippur is the most valuable Jewish festival" Discuss.

Beliefs

Purpose of Life

Akhirah is the word Muslims use to refer to life after death. Belief in an afterlife encourages Muslims to take responsibility for their actions. They know God will hold them accountable and reward or punish them accordingly.

They believe in Jannah and wanting to avoid Jahannam!

Right vs Wrong

Muslims use Holy books to learn right from wrong! The most important holy book is the Qur'an. This is the exact word of God that has never changed in 1500 years! Similarly, Muslims can use Hadiths to know what Muhammad would do right.

Nuh

God charged Noah with the duty of preaching to his people, advising them to abandon worshipping fake gods and to worship only God and to live good and pure lives. Although he preached the Message of God with enthusiasm, his people refused to mend their ways, leading to building the Ark and the Deluge, the Great Flood.

Islamic art

Muslims think it is wrong to try to represent Allah's work.

- For this reason, Muslims do not believe in making pictures of humans or animals.
- It is a very serious crime in Islam to try to draw Allah or his messenger Muhammad.
- Muslims believe that Allah (their God) is the creator and the focus of our worship. They want to avoid people worshiping anyone apart from Allah, therefore it is easier to avoid images.

Muhammad

The Prophet Muhammad (pbuh) was a merchant born in the city of Mecca. Muhammad was respected as he was a wise and fair businessman. Tradition says Muhammad escaped the busy city during the month of Ramadan and went to the mountains by himself to think. Muslims believe Allah chose Muhammad to be his Prophet because he was a fair and wise man and because he was concerned for the people.

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Year 7 Subject Term Knowledge Organiser- PE orienteering

Skills and Techniques

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Running activities: All lessons start with running activities to encourage pace and speed. Cardiovascular fitness is required over different types of terrain.

Observing surroundings: Look at your surroundings (playground/ cage/ grass areas/ tree) and identify key features that help you find your precise location. You need to observe your surroundings before looking for markings on a map.

Orientating a Map. You need to orientate your map (move it) to line up with the key features on the ground and check it is the correct way round to the direction you are facing.

Directions: - understand the Cardinal Markers – North, South, East and West and their relation to features on the ground and to places beyond the school site.

Map Reading – Recognise symbols on a map, be able to use a key to recognise symbols and colours on an orienteering map.

Human features: Know that a human feature is influenced by man (buildings, benches, fences, walls)

Physical Features: Know that a physical feature is natural (rivers, beaches, hills, forests)

.Skills and techniques
KEY: know the symbols used in the key for the school and fields Maps

tarmac
soft surfaces
mown grass
rough grass
new trees
sand
bushes
pond
garden
out of bounds
slope
path
ditch
steps
fence, gate
high fence
tree
tree root stock
building, canopy
seat, post

Glossary

Orienteering,   Location,   Speed,

Cardiovascular Fitness,   Setting a Map,

Navigation,   Diverse,   Direction,   Key,

Cardinal Markers,   Terrain,   Map,

Compass,   Control point,   Thumbing
Pictures

Orienteering flag
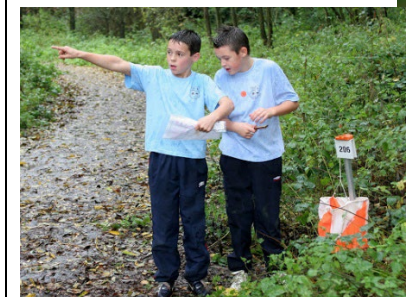
Working as a team

| Rules: | Tactics | . |

The main aim of orienteering is to complete the set course by finding control markers in the correct order in the shortest time.

Although it Is based on accurate map reading it is also a test of physical fitness.

You must find all the controls you are told to visit and record them on your score sheet.

You have to consider the terrain you are moving over ensuring your safety and the safety of any team members at all times, taking into account the varying fitness level of all your team members.

If you are working in a team, you must share the responsibility of finding the controls and make sure that all members of your team have an opportunity to problem solve to find each of the controls.

Team work is necessary when you are completing an orienteering course with others. You must communicate and discuss each decision before navigating to the next control point. Mistakes can easily be made through poor communication.

All control marker are outside, you must not go inside the school building to cut through to find controls.

You and your team must find the controls yourself and not shout out control symbols to others

In order to be given a finish time for finding controls the whole team has to finish together

A key tactic to use is pace. You must make sure that you don't sprint off too quickly without orientating yourself and your map. You need to be able to keep a steady pace up all the way round the course.

You need to be able to orientate your map quickly by finding key features on the ground and then lining yourself and your map up to face the same direction

Each time you change direction whilst you are running you should change your grip on the map so that the map is re-orientated and remains facing the same direction as the features on the ground.

Star exercises: In a start exercise you have to run out from a central start point to a control and remember the answer on the control marker, if you are in a team you should each remember a different answer if you have to run to more than on control marker.

Courses, sometimes you will be given more than one control to find at a time which makes up a course. You may do a different course to another team and as it's a race you should not shout out your answers.

Thumbing- to help you know where you are on the map, you mark your position with your thumb. As you move along the ground, you should move your thumb to your new position on the map.

Line features – you can use features on the ground to help you run towards the control marker, (e.g. edge of the cage/ line of trees / fence) so that you can run in the general direction towards a control and then be more precise in your navigation as you get closer to the control.

Orienteering Control
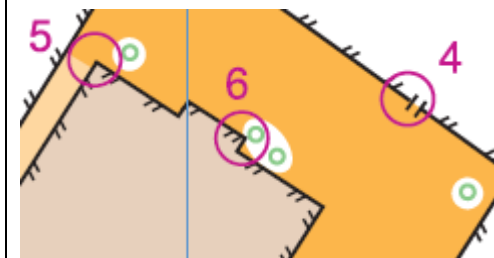
Orienteering Map

Racing to the finish

Tenses-Present

TENER = to have	
Tengo	I have
Tienes	You have
Tiene	He/She/It has
Tenemos	We have
Tenéis	You all have
Tienen	They have

LLEVAR = to wear	
Llevo	I wear
Llevas	You wear
Lleva	He/She/It wears
Llevamos	We wear
Lleváis	You all wear
Llevan	They wear

Opinions & Pronouns

Me gusta

Me gusta much

No me gusta

No me gusta nada

Me encanta

Connectives

- **También= also**
- **Y= and**
- **Pero= but**
- **Sin embargo = however**
- **Porque = because**

Adjectives

Azul(es)	*Blue*
Marrón(es)	*Brown*
Verde(s)	*Green*
Gris(es)	*Grey*
Negro	*Black*
Liso	*Straight*
Rizado	*Curly*
Ondulado	*Wavy*
Largo	*Long*
Corto	*Short*
Media talla	*Mid length*
Es calvo	*He/she is bald*

Me gustaría tener = I would like to have
Tengo los ojos... = I have... eyes
Tengo el pelo... = I have... hair
Soy pelirojo = I am a red-head

Year 7 MUSIC HT3 Knowledge Organiser

WOODWIND

Clarinet

Flute

Saxophone

All have reeds except the flute

Bassoon and oboe have TWO reeds

Bassoon

Oboe

BRASS

Trumpet

French horn

All have valves except the trombone

Trombone

Tuba

STRINGS

Highest

Violin

Cello

Double bass

Harp

Viola

Lowest

PERCUSSION

Xylophone

Made of wood

Snare drum

Glockenspiel
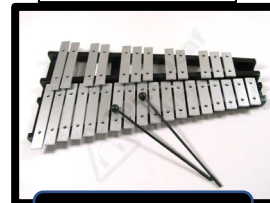
Bass drum

Timpani

Any instrument you hit or shake is percussion

AKA kettle drums

Made of metal

Longdendale
HIGH SCHOOL

Design Process

Design Brief — A statement outlining what is to be designed and made.

Specifications — A list of design criteria.

Research — Sourcing information and inspiration to help with design work

Ideas — A range of potential solutions to the Problem.

Development — Further improving an idea.

Final Design — A presentation drawing of chosen idea.

Manufacture — Making the final outcome.

Evaluation — Reviewing strengths and weaknesses of final product and design work.

Health and Safety


SAFETY FIRST WALK DON'T RUN

No eating or drinking

Long hair must be tied back

Wear goggles

Protective apron must be worn

Pillar Drill

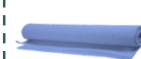Head, Hand Wheel, Spindle, Chuck, Table, Base, Electric Motor, Column

Pillar drills are free standing machine tools used by engineers that use high powered motors to rotate drill bits at varying speed.

CAD / CAM

CAD stands for Computer aided design and refers to any design that is created through the use of computer software.

Laser Cutter

CUT — SCORE — RASTER

Laser cutting is a method of cutting shapes or designs into sheet metal or other structural materials.

Plywood

Sheet materials manufactured from layers or particles of wood. Reddish brown or white in colour. Layered in odd numbered sheets. Strong. Susceptible to splintering Used in sheds and cladding, furniture, flooring, boats (marine ply).

Measure

CLASSMATES   SHATTER RESISTANT

Measuring in millimetres is more accurate than measuring in centimetres. 1cm = 10mm

Year 7 Design Knowledge Organiser

Design Process

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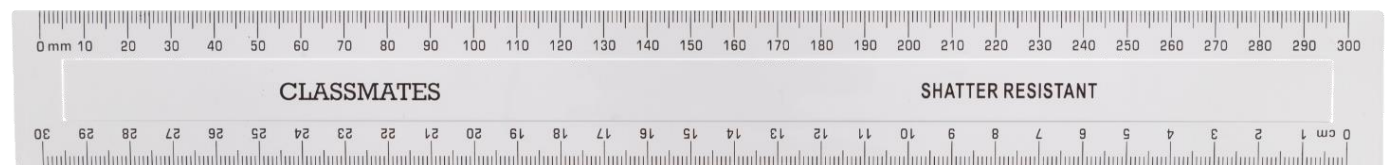
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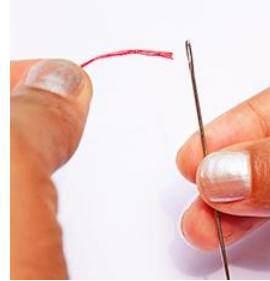# Year 7 Textiles Knowledge Organiser

Equipment

Needle — A piece of metal with a point at one end and a hole or eye for thread at the other, used in sewing.

Pins — A piece of metal with a point at one end for holding fabric together.

Sheers — Used for cutting fabric.

Fabric — Cloth produced by weaving or knitting textile fibres.

Unpicker — A small piece of equipment with a sharp pointy end used to unpick stitches.

Tailors Chalk — Chalk used to mark fabric.

Thread — A strand of cotton, used in sewing or weaving.

Pattern — A template used to cut out the fabric.

How to Thread a Needle

Step 1
Hold the needle in your non dominant hand and the thread in your dominant hand.

Step 2
Hold the needle in the one hand and take the eye of the needle closer to the tip of the thread in the other hand.

Step 3
Keep pushing the needle further until the end of the thread emerges well enough through the other side of the eye. Pull the end of the thread out.

Step 4
Pull the end of the thread through the eye of the needle and tie of the end of the thread in a knot.

Health & Safety

1. Work slowly to avoid sticking yourself with the needle.
2. Keep your eyes on your work.
3. Use the right tool for the job.
4. Store tools and equipment properly.
5. Cut with care.
6. Before you walk away, put things away!

Hand Sewing Stitches

Running Stitch

Back Stitch

Whip Stitch

Blanket Stitch
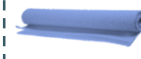
Chain Stitch

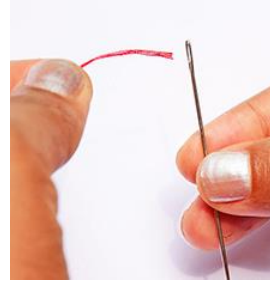## Sewing Techniques

Embroidery

Appliqué

Year 7 Textiles Knowledge Organiser

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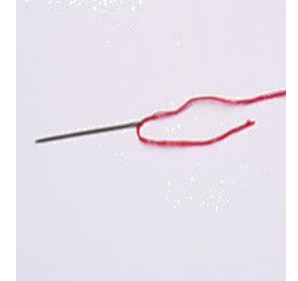Hold the needle in your non dominant hand and the thread in your dominant hand.

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Back Stitch

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Sewing Techniques

Embroidery

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