



# Year 7 - Half term 6

## 100% Book

Name: \_\_\_\_\_

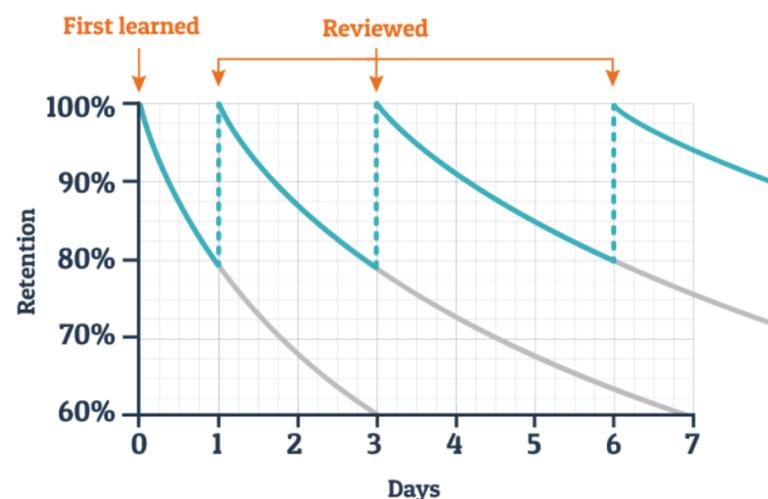
Form Tutor: \_\_\_\_\_



# Your 100% book and knowledge organisers

Your knowledge organisers contain the threshold knowledge you must know for each topic, for each of your subjects. They aim to help you to recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term. If we don't go back over the new information we learn in lessons we will simply forget it!

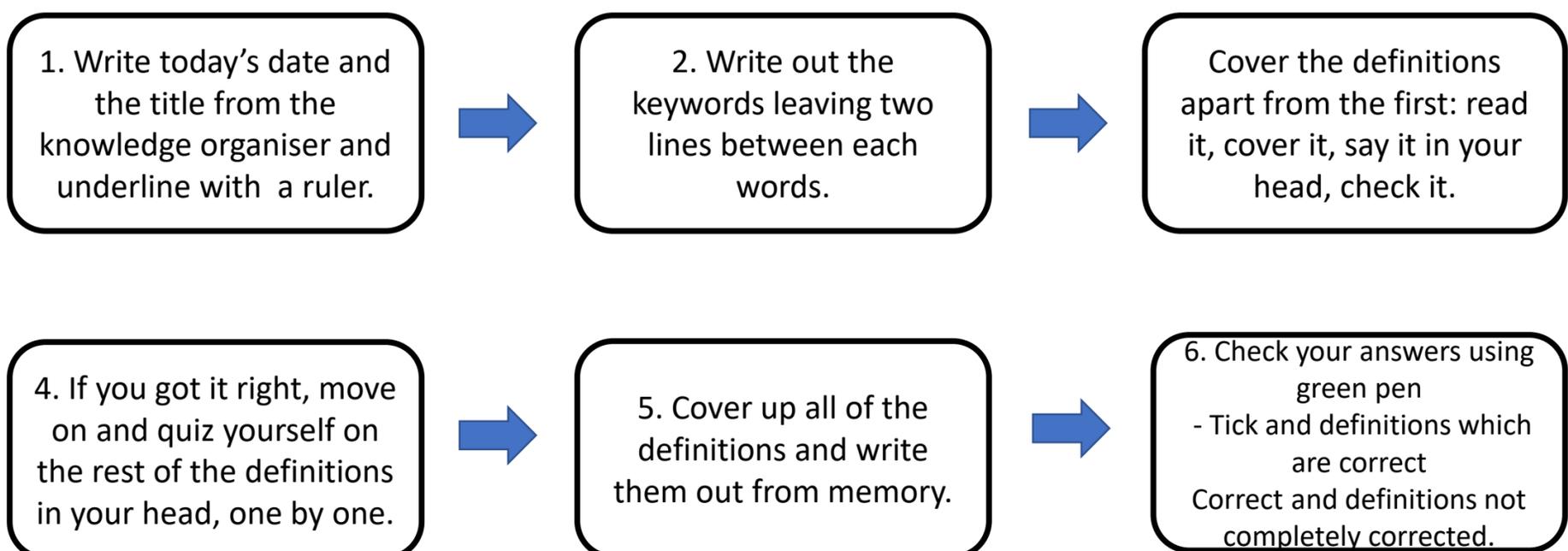
Typical Forgetting Curve for Newly Learned Information



- **You must** have this 100% book with you for every lesson – it is part of your equipment and will be checked each day by your form tutor.
- **You must** keep each of your 100% books once you have finished each half term for revision.

## How do I use my 100% book? (Insert you tube link to a demo)

- Your teachers will set HW tasks from them including; spelling tests, ACE tasks, Cold and Hot questions and CMQs.
- You will use your book in lessons to research new knowledge and to test your knowledge of what you have learnt.
- You will use your book to self-quiz and test your knowledge of key terms as part of your HW and revision using the 'memory method' technique below. **You will remember 50% more when you test yourself.**



## Another great self-quizzing strategy we recommend is:

- **The Leitner system:** Create Q&A flashcards with a question on one side, and an answer on the other (or key terminology on one side, and definitions on the other). Aim to test yourself several times a week, and revise each card depending on whether you got it right last time or not.



**Unit Intent:** Of all the plays that Shakespeare wrote during the reign of James I, who was patron of Shakespeare's acting company, Macbeth most clearly reflects the playwright's relationship with his sovereign. It was first published in the Folio of 1623, possibly from a prompt book, and is Shakespeare's shortest tragedy. As well as studying the play, pupils will be forming opinions and persuading specific audiences of their point of view.

### Exposition



An injured soldier comes to tell King Duncan about their battle in the Western Aisels and tells him about Macbeth and how much of a fearless soldier he is. He also says they would've lost the battle without him.

### Conflict



One prophecy is fulfilled when Macbeth is crowned Thane of Cawdor. He believes that in order for the other prophecy to be fulfilled, him becoming king, then he has to do something about it. He is against the prophecy.

### Rising Action



Macduff is revealed to be the one person who can defeat Macbeth during their battle.

### Climax



Macbeth's reign is finally over and he is killed by Macduff with a clean decapitation.

### Falling Action



Macduff holds up Macbeth's head to reveal his death.

### Resolution



Malcolm is dubbed king of Scotland and gives a speech.

**Task**  
Can you think of a quotation from each of these key scenes?  
**Challenge**  
Write a definition of the headers for each scene

**Task:** Where do these themes appear in the play and with which characters?

## Macbeth: THEMES

 FATE & FREE WILL	 AMBITION	 POWER	 VERSIONS OF REALITY
 GENDER	 THE SUPERNATURAL	 VIOLENCE	 TIME

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## Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

William Shakespeare	soliloquy	playwright	Macbeth	Duncan
Language	theme	prophecy	Vision	Lady Macbeth
Regicide	Jacobean	political	dramatist	villain
Tragedy	historical	strength	ambition	conscience

### Task:

1. look, cover, spell.
2. Add the definition of each word in the box

**Challenge:** can you think of a specific moment each of these appear in the play?

**Task:** How are the characters linked to each other?

### Key Characters:

Macbeth  
Duncan  
Lady Macbeth  
Macduff  
Banquo  
Fleance  
Donalbain  
Malcolm  
Three Witches

### Context Task

William Shakespeare wrote during the reign of Queen Elizabeth I and James I.

*Research whether any laws passed by these two monarchs would have had any impact on his writing (would it have influenced him, was he mocking any of these monarchs, did he prefer one over the other) and write a 500 word report on your findings.*

### Grammar (Connectives)

#### Connectives

A word/words used to connect words, phrases, clauses, and sentences, as a conjunction.

#### Examples of connectives

And, Next, Therefore, Because, As Well As, Furthermore, Later, But, So, Then, Moreover, Unless, However

**Task** Write five complex sentences using your own connectives.

## Act 1, Scene 3

MACBETH

[Aside] Two truths are told,

As happy prologues to the swelling act

Of the imperial theme.--I thank you, gentlemen.

Aside

Cannot be ill, cannot be good: if ill,

Why hath it given me earnest of success,

Commencing in a truth? I am thane of Cawdor:

If good, why do I yield to that suggestion

Whose horrid image doth unfix my hair

And make my seated heart knock at my ribs,

Against the use of nature? Present fears

Are less than horrible imaginings:

My thought, whose murder yet is but fantastical,

Shakes so my single state of man that function

Is smother'd in surmise, and nothing is

But what is not.

### Accept

**How do Macbeth's actions affect the other characters in the play?**

Focus on **one** character.

Use **textual references** to support your point

Explain clearly **how** Macbeth has influenced them.

### Accept 2

**Malcolm and Donalbain fleeing shows that neither is fit enough to be King. Write a paragraph accepting this statement.**

### Challenge

**How does the extract above reflect the context of the play? How is this different to how a modern audience would view the play?**

Consider how a Jacobean audience would respond and how a modern audience would respond—explain the differences between the two.

### Challenge 2

**Why does Shakespeare use so much negative imagery in the extract? What message is he trying to convey?**

# Hot and Cold Questions:

## Can you get 100%?

### **Cold:**

1. Who do Macbeth and Banquo meet upon the heath?
2. What is the name of the King of Scotland at the END of the play?
3. What item does Macbeth use to kill Duncan?
4. Which animal does Lady Macbeth advise her husband to be?
5. In two colours, identify all of the positive and negative words used in this section.

### **Hot:**

1. Summarise Macbeth's soliloquy in modern English.
2. Why do you think this part of the play is written as an aside?
3. Why is Macbeth so confused in this section even though it's so early in the play?
4. What does this show about the witches and their relationship with Macbeth after just one meeting?
5. What does yield mean? Why is that important?
6. What 'horrid image' is he referring to in the text? What can you infer about his state of mind?
7. Complete a quote explosion for the quote "Two truths are told, as happy prologues"
8. Can you use any of the words from your spelling list in a sentence?

### Extend

**Write a letter from Banquo to Malcolm and Donalbain confessing his suspicions about Macbeth.**

Focus on your use of **sophisticated vocabulary**.

Use a range of connectives

Use a thesaurus to include ambitious adjectives

### Extend 2

**Banquo is to blame for not challenging Macbeth when he had suspicions. Write a paragraph to extend this statement.**

STC3

Remember to use your 'memory method' techniques to remember 100%

of your key terms

**Co-ordinate** - a set of values that show an exact position,

on graphs it is usually a pair of numbers: the first number

shows the distance along, and the second number shows the distance up or

down

**Axis** - a reference line drawn on a graph (you can measure from it to find values)

**Origin** - the starting point, on a set of axes it is the middle of the graph (0,0)

**Quadrant** - any of the 4 areas made when we divide up a plane by an x and y axis

**x axis** - the line on a graph that runs horizontally (left-right) through zero

**y axis** - the line on a graph that runs vertically (up-down) through zero

**x co-ordinate** - the horizontal value in a pair of co-ordinates: how far

along the point is, the x co-ordinate is always written first in an ordered

pair of coordinates (x,y)

**y co-ordinate** - the vertical value in a pair of co-ordinates. How far up or down the point is, the y co-ordinate is always written second in an ordered

pair of coordinates (x,y)

**Graphs** - a diagram of values, usually shown as lines

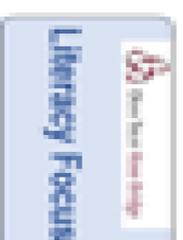
**Relationship** - a connection between sets of numbers or sets of elements

**Equations** - an equation says that two things are equal, it will have an equals sign

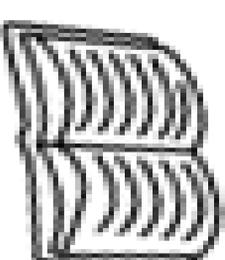
**Linear** - an equation that makes a straight line when it is graphed

**Straight-line graph** - a linear graph

**Conversion graph** - used to change one unit into another



100%



Maths Year 7  
Unit 20 - Co-Ordinates  
and Graphs

**Unit Intent:** Pupils should be able to plot co-ordinates in all four quadrants, plot horizontal and vertical lines, plot linear graphs and understand real life graphs.

Plotting Co-Ordinates

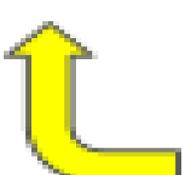
Remember when plotting co-ordinates you must do it in alphabetical order (x then y) - along the corridor and up the stairs is a good way to remember this.

**LEARN**

Linear Graphs

Linear graphs have a pattern and increase by the same amount each time

**THIS!**



Mid-Point

To find the mid-point of a line just add together the two x co-ordinates and half it then repeat for the y co-ordinates.

a) The point M is halfway between points A and B.

What are the coordinates of

point M?

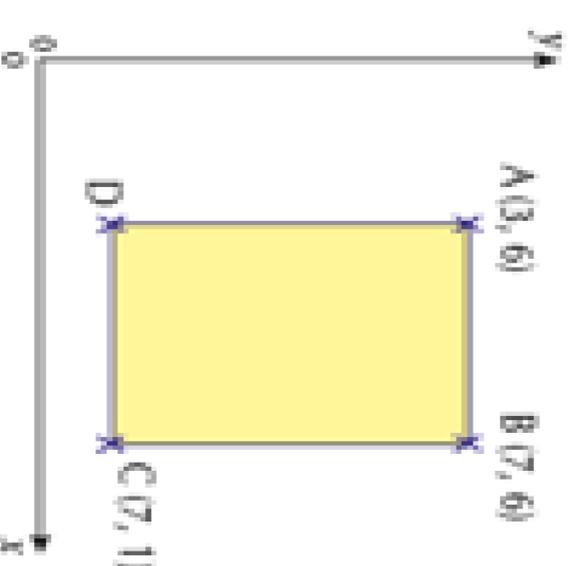
b) Shape ABCD is a

rectangle.

What are the

coordinates of point D?

STC5



**C H A L L E N G E**

Maths 100% Book Year 7 Unit 20 - Co-Ordinates and Graphs

Plotting Co-Ordinates

Plotting vertical and Horizontal Graphs

Plotting Linear Graphs

Times-Distance Graphs

### Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

STC4

### ACE question

STC5

Jennifer writes:

Copy and complete the table of values and plot the three lines on

the grid:

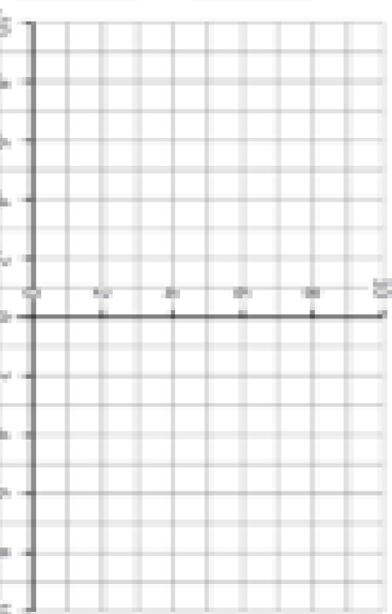
a)  $y = x + 5$

x	0	1	2	3	4	5
y			7			

*This point has co-ordinates (3,5) because you can see from my highlighter that you go along from 3 and you go up from 5.*

b)  $y = 2x - 4$

x	-2	-1	0	1	2	3
y			-4			



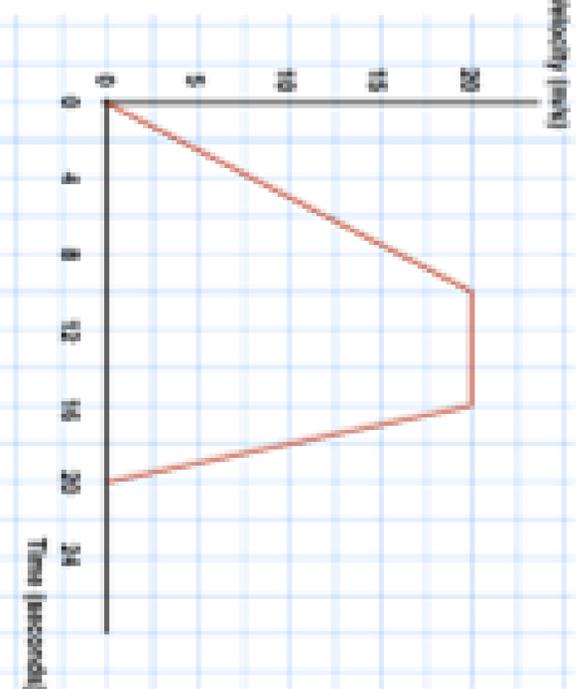
c)  $y = -x - 1$

x	-2	-1	0	1	2	3
y						-3

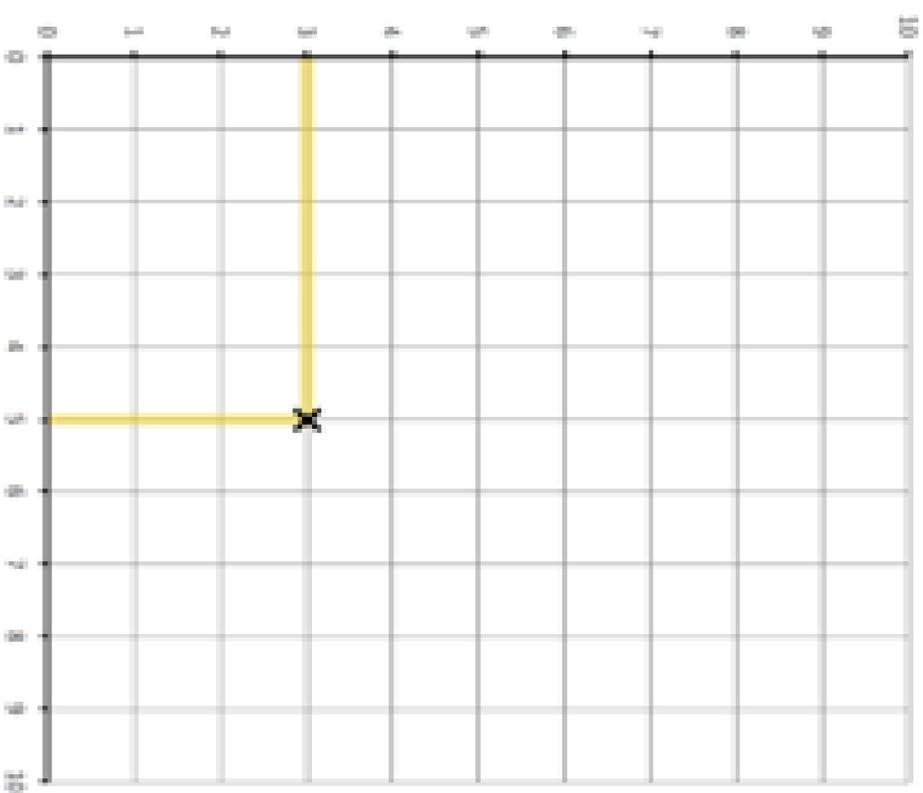
STC6

This graph shows Zayn's journey to school. Zayn walks to a bus stop, waits for a bus, and then gets the bus to school.

Velocity (m/s)



Use ACE to analyse her answer.



to school.

- a) How far does Zayn travel to school?
- b) How long does Zayn's journey take?
- c) How long does Zayn wait for the bus?

A

C

E

a) At what speed does Zayn walk?

b) At what speed does the bus travel?

Remember to use your 'memory method' techniques to remember 100% of your key terms

At random - happening by chance, not able to be predicted

Event - one (or more) outcomes of an experiment

Chance - the occurrence of events in the absence of any obvious intention or cause. When the chance is defined in mathematics, it is called probability

Outcome - a possible result of an experiment

Probability - the chance that something will happen. How likely it is that some event will occur

Probability scale - the use of numbers to describe probabilities on a number scale between 0 and 1

Random - happening by chance, not able to be predicted

Biased - a systematic (built-in) error which makes all values wrong by a certain amount

Fair - all outcomes have an equal chance of being picked

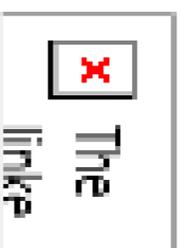
Equally likely - events that have the same theoretical probability (or likelihood) of occurring

Probability fraction - the probability of an even happening can be written as a fraction e.g. the probability of rolling a 5 on a six sided dice is  $\frac{1}{6}$

Theoretical probability - the probability you would expect e.g. if you flip a coin 10 times you would expect to get 5 head and 5 tails

Experimental probability - the actual result when the experiment is carried out e.g. when flipping a coin 10 times you might actually get 4 heads and 6 tails

Trial - in probability: A single run of an experiment



Unit Intent: Pupils should be use the probability scale, understand probability terminology and calculate and interpret probabilities.

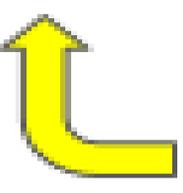
LEARN

Probability can be written as a fraction, decimal or percentage.

Probability adds up to 1 and **CANNOT** be more.

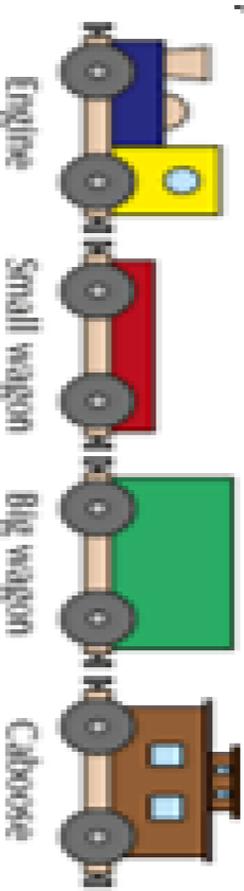
Experimental probability of an outcome =  $\frac{\text{number of times the outcome occurs}}{\text{total number of trials}}$

THIS!



CHALLENGE

In each box of cereal there is a free gift of part of a toy train.



There are four parts to the train.

You cannot tell which part will be in any box. Each part is equally likely.

a) Alex needs an engine to complete her train.

Her sister Misha needs a big wagon and a caboose.

They buy **one** box of cereal.

i. What is the probability that the part is the engine?

ii. What is the probability that the part is a big wagon or a caboose?

b) Their mother opens the box.

She tells them the part is not an engine.

i. Now what is the probability that the part is the engine?

ii. Now what is the probability that the part is a big wagon or a caboose?

## Maths Knowledge Organiser Year 7 Unit 21 - Calculating and Interpreting Probabilities

Probability Scale

Representing Probability and Listing Outcomes

Experimental Probability

AND/OR Rule

## Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

**STC5**

a) Adam puts three white counters and two black counters in a bag.

He is going to take out one counter without looking.

What is the probability that the counter will be black?

b) Adam puts the counter back in the bag and then puts more black counters in the bag.

He is going to take one counter without looking.

The probability that the counter will be black is now  $\frac{3}{4}$ .

How many more black counters did Adam put in the bag?

**STC6**

Katie buys a bag of sweets.

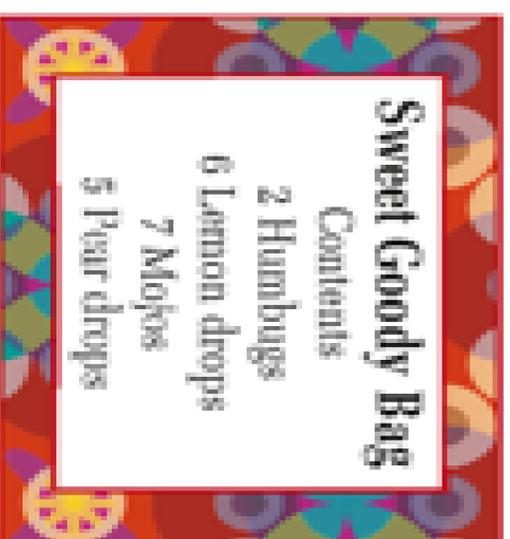
On the bag is a list of the sweets inside.

She takes a sweet from the bag at random.

a) What is the probability that she will get a lemon drop?

b) Write the missing sweet from the sentence below.

The probability that Katie will get a ... is  $\frac{1}{4}$ .



**STC4**

## ACE question

Ben explains that the probability of rolling a 4 on a fair dice is  $\frac{2}{3}$  as follows:

*“There are six outcomes so the probability of a 4 is  $\frac{4}{6}$  which simplifies to  $\frac{2}{3}$ ”*

Use ACE to analyse his answer.

A

C

E

STC3

### Keyword Spellings and Definitions

Remember to use your 'memory method' techniques to remember 100% of your key terms

Line of symmetry - another name for reflection symmetry.

the reflection of the other half

Mirror line - an image which is like a reflection in a mirror, everything is the same, except reversed.

Reflect - an image or shape as it would be seen in a mirror

Rotational symmetry - a shape has rotational symmetry when it still looks the same after some rotation

Image - another name for Range of a Function

Object - the shape or points you want to translate

Reflection - an image or shape as it would be seen in a mirror

Tessellation - a pattern made of one or more shapes, the shapes must fit together without any gaps and the shapes should not overlap

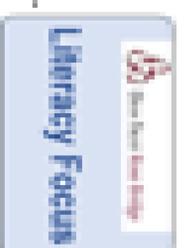
Enlarge - to make larger (can be made smaller with a scale factor smaller than 1)

Scale factor - how you change the original shapes size e.g. scale factor of 2 makes it 2 times bigger

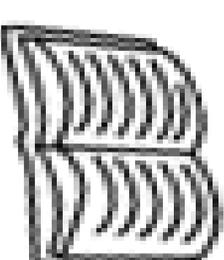
Translation - moving a shape without rotating or flipping it

Vector - a vector has magnitude (how long it is) and direction, it is how you move a shape

Transformation - changing a shape using rotation (turn), reflection (flip), translation (slide) or enlargement (resize)



100%



Maths Year 7

### Unit 22 - Transformations

Unit Intent: Pupils should be able use and describe all four transformations.

#### REBT

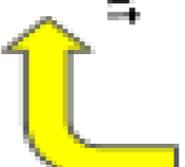
Remember this word when it comes to transformations, it'll help you remember them all:

**R**otation - don't forget degrees, direction and center

**E**nlargement - don't forget the center of enlargement and scale factor

**R**eflection - don't forget the line the shape has been reflected **THIS!** in

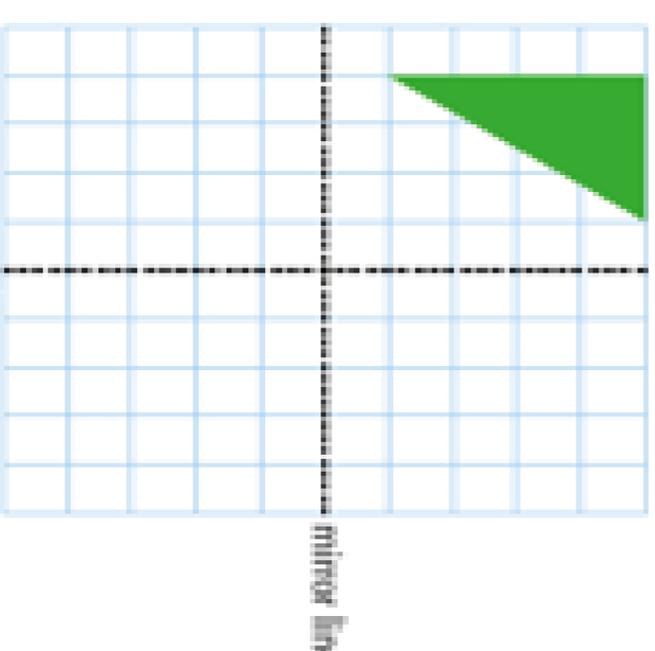
**T**ranslation - don't forget the vector used (top is left or right and bottom is up or down)



**DO NOT** mention more than one transformation when describing a transformation, this will lose you all your marks.

Reflect the triangle in the two mirror lines

STC5



**C H A L L E N G E**

Maths Knowledge Organiser Year 7 Unit 22 - Transformations

Symmetry and Reflection

Rotation

Enlargement

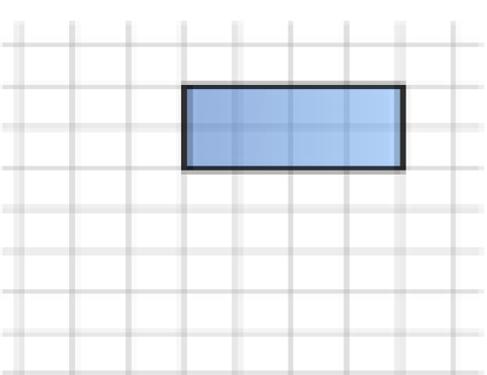
Translation

### Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

**STC5**

Enlarge each of these shapes by the given scale factor:



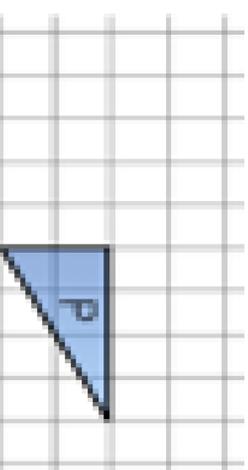
Scale Factor 2

Scale Factor 3

Scale Factor  $\frac{1}{2}$

**STC6**

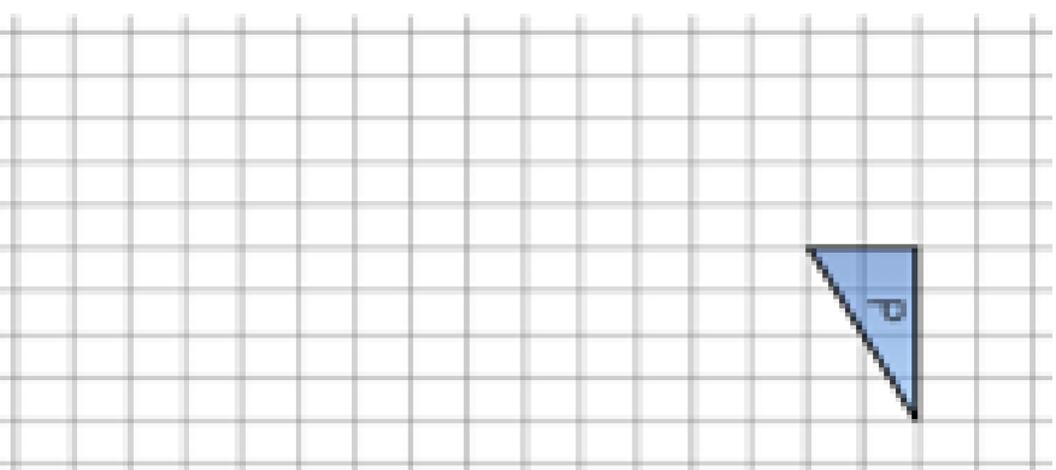
- a) Translate triangle P by the column vector  $\begin{pmatrix} -4 \\ 7 \end{pmatrix}$ . Label this triangle Q.



- b) Translate triangle Q by the column vector  $\begin{pmatrix} 1 \\ 5 \end{pmatrix}$ . Label this triangle R.

vector  $\begin{pmatrix} 1 \\ 5 \end{pmatrix}$ . Label this triangle R.

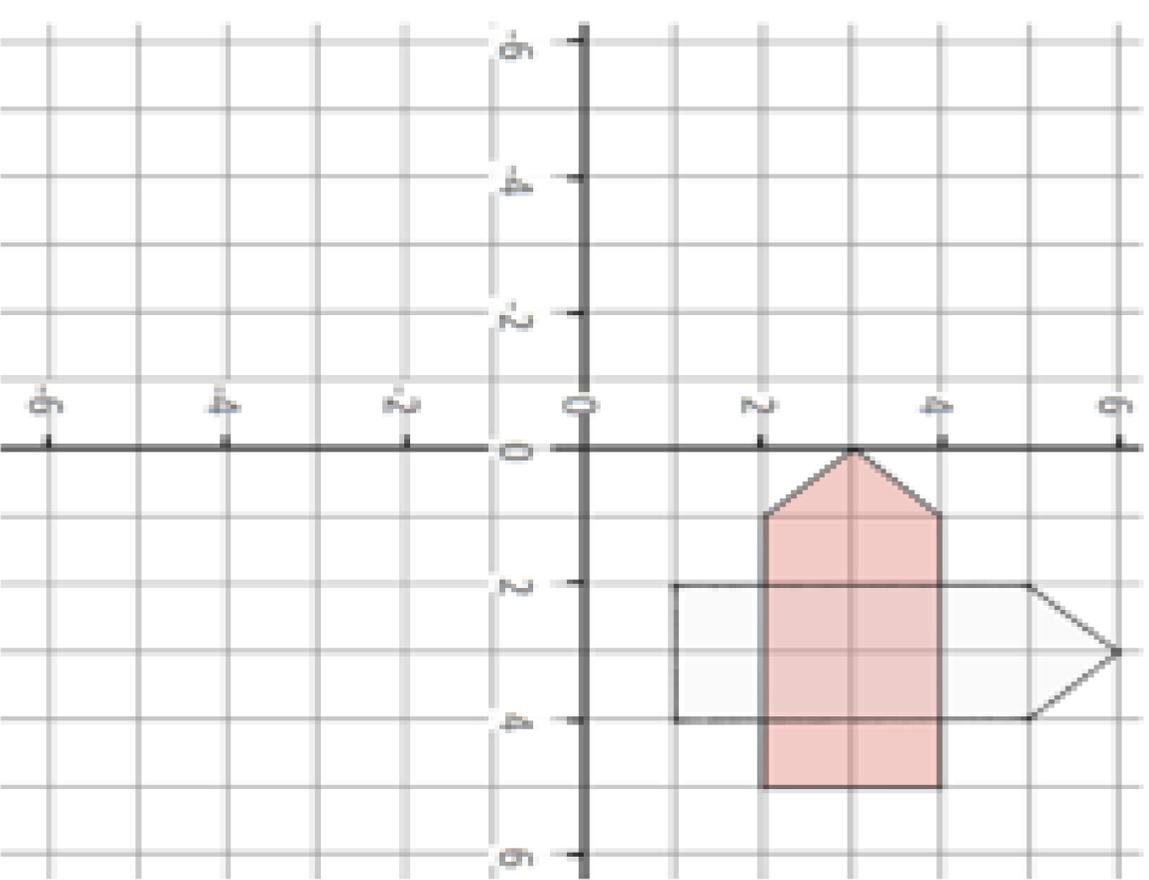
- c) Write down the translation that would map P directly onto R.



**STC4**

### ACE question

Leah rotates the following shape 90° clockwise about the origin.



Use ACE to unguise her answer.

**A**

**C**

**E**



**Unit Intent:** This unit explores sexual reproduction in animals, in the context of efforts being made by zoos to prevent endangered species becoming extinct. However, the central focus for learning is the human reproductive system and sexual reproduction in humans.

**Key Definitions:** Remember to use your 'memory method' techniques to remember 100% of your key terms.

**Sexual reproduction:** between two parents (one male and one female)

**Offspring:** the young of an organism

**Gametes:** sex cells

**Egg cell:** female sex cell

**Sperm cell:** male sex cell

**Fertilisation:** when the nuclei of the egg cell and sperm cell fuse (join) together

**External fertilisation:** fertilisation outside the body

**Internal fertilisation:** fertilisation inside the body

**Zygote:** fertilised egg cell

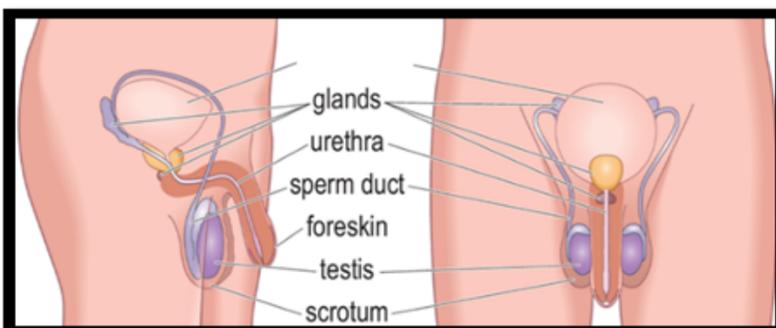
**Gestation:** time from fertilisation to birth

**Adolescence:** time when emotional and physical changes occur in the body

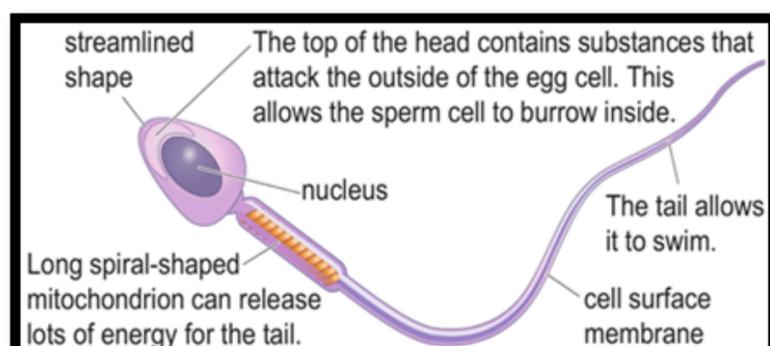
**Sexual reproduction** requires **2 parents** (a male and female). **Sperm** is released from the male, and an **egg** (ovum) from the female. The sperm and egg fuse during **fertilisation**. The offspring (baby) is **not identical** to the parents.

**Asexual reproduction** requires only **one** parent. This divides by a process called **mitosis**. The offspring is **identical** to the parent.

### Male Reproductive System



### Male Gamete—sperm cell



**Glands:** fluids are added to the sperm. This provides the sperm with a source of energy.

**Urethra:** the tube that semen (mixture of sperm & fluids) leaves the body through.

**Sperm duct:** the tubes the sperm travel through from the testis to the glands.

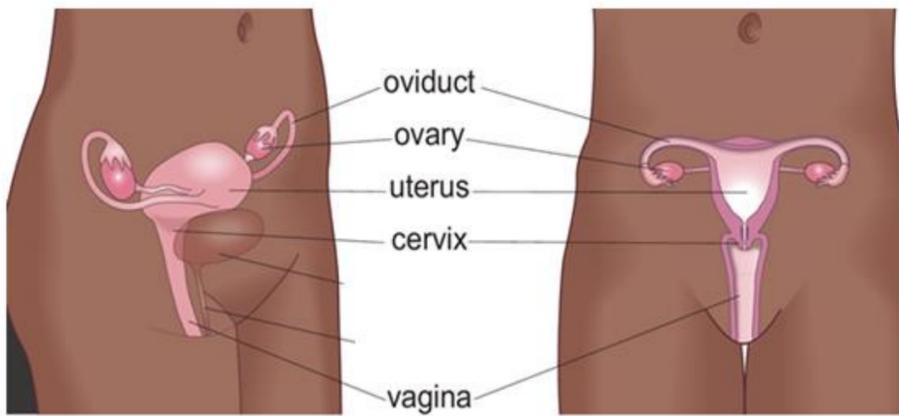
**Foreskin:** protective covering of skin on the head of the penis.

**Testis:** where sperm cells are made. Make the male sex hormones.

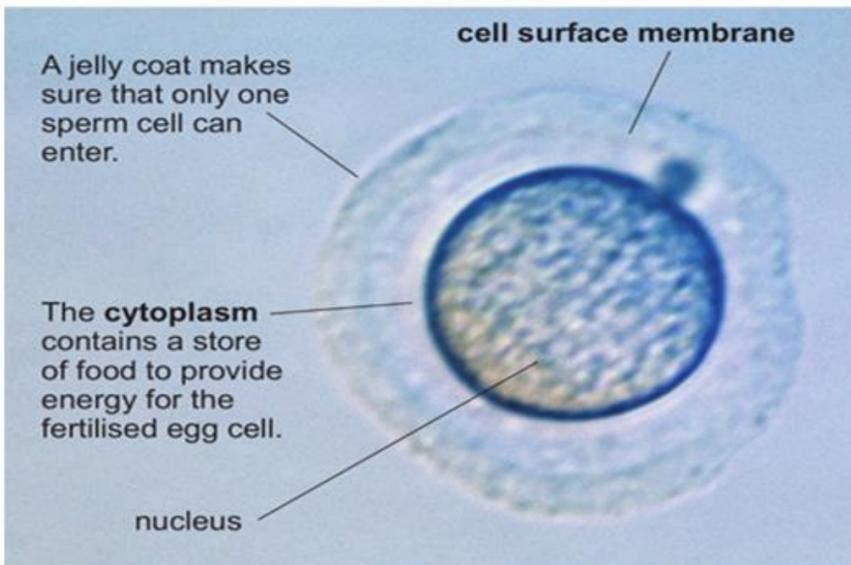
**Scrotum:** the bag of skin that surrounds the testes.

Testes are outside the body to be at the correct temperature for sperm production.

## Female Reproductive System

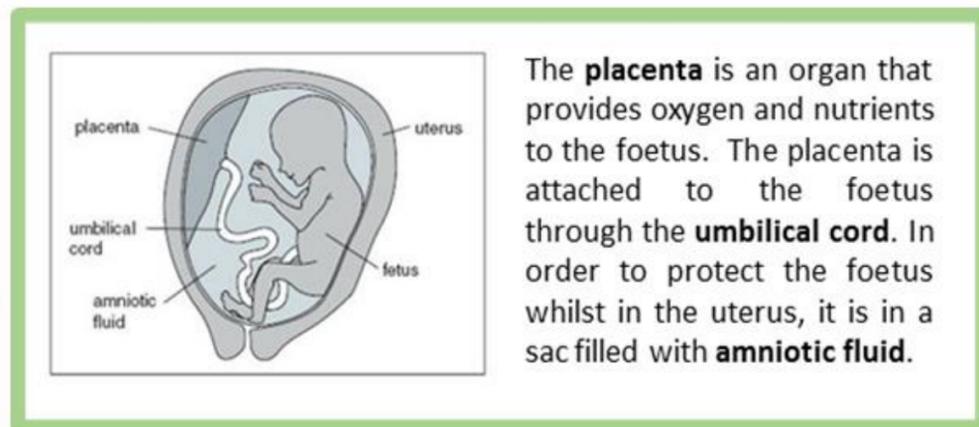
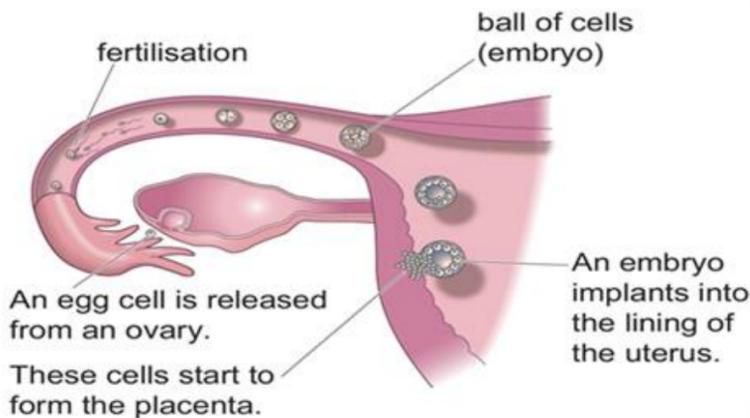


## Female Gamete—egg cell



## Key Term Definitions:

1. **Ovary:** Where egg cells are released from.
2. **Oviduct:** The tube that the egg cell travels down from the ovary to the uterus. Place where fertilisation takes place. Also known as a fallopian tube.
3. **Uterus:** Where the baby will develop.
4. **Cervix:** The ring of muscle at the bottom of the uterus. Holds the baby in place during pregnancy.
5. **Vagina:** where the penis is placed during sexual intercourse.



Boys	Girls
Voice deepens 'breaks'	Stronger body smell
Shoulders get wider	Under arm hair grows
Hair grows on under arms, face & chest	Breasts develop
Stronger body smell	Ovaries start to release eggs
Pubic hair grows	Pubic hair grows
Testes and penis get bigger, testes make sperm	Hips get wider

## Puberty and the Menstrual Cycle

The female reproductive system includes a cycle of events called the **menstrual cycle**. It lasts for **28 days**, but can be slightly more or less than this. The cycle stops if a woman is pregnant. The stages are as followed:

1. The cycle starts on the **first day** when **bleeding** from the vagina starts (a period). This is the loss of the lining of the uterus with a small amount of blood. This is called **menstruation**.
2. By the end of **day 5**, the loss of blood **stops**. The uterus lining starts to regrow and an **egg (ovum) starts to mature** in one of the ovaries.
3. On **day 14**, the matured egg is released from the ovary. This is called **ovulation**. The egg travels through the fallopian tube to the uterus.
4. If the egg does not meet a sperm cell in the fallopian tube, the uterus lining starts to break down again to start the cycle again.

## Keyword Spellings:



gamete	fertilisation	reproduction	zygote	gestation
testes	urethra	embryo	ovary	oviduct
uterus	cervix	vagina	menstruation	adolescence

Are you ready to answer these questions based on your learning so far? Can you get 100% correct?



### Cold Questions:

1. What is asexual reproduction?
2. How many parents are needed for sexual reproduction to take place?
3. Define fertilisation.
4. Where in the female reproductive system does fertilisation take place?
5. What is a gamete?
6. Where is the male gamete produced?
7. What is adolescence?
8. What is the function of the placenta?
9. What is menstruation?
10. What happens on day 14 of the menstrual cycle? Define what that term means.

### Hot Questions:

1. Explain how non-identical twins can be produced from sexual reproduction.
2. Justify the need for IVF and explain how IVF works.

### Careers corner

Earn yourself 50 class-chart points by researching a career linked to your current science topic. Examples include:

**Embryologist, Midwife,  
Zoologist.**

You can use <https://www.startprofile.com> to find out about lots of different science related careers.



### Websites:

#### Pearson Active Learn:

<https://www.pearsonactivelearn.com/app/Home>

#### BBC Bitesize:

<https://www.bbc.co.uk/bitesize/guides/z9fgr82/revision/1>

#### Seneca Learning:

<https://www.senecalearning.com/>



## Unit Intent:

This unit uses a theme park to introduce the idea that stores of energy are needed to make most things happen. It looks at food, energy stores and transfers, and energy resources in terms of non-renewable fuels and renewable resources.

## Key Definitions: Remember to use your 'memory method' techniques to remember 100% of your key terms

1. **Diet**—what you eat
2. **Energy**—something that is needed to make things happen or change.
3. **Joule (J)** - The unit for measuring energy
4. **Kilojoule (kJ)** - there are 1000 joules in 1 kilojoule.
5. **Ratio**—a way of comparing two different quantities. Two numbers separated with a colon (:).
6. **Atomic energy**—a name used to describe energy when it is stored inside materials. Another name for nuclear energy.
7. **Chemical energy**—a name used to describe energy stored in chemicals. Food, fuel and batteries all store chemical energy.
8. **Elastic potential energy**—a name used to describe energy when it is stored in stretched or squashed things that can change back to their original shapes.
9. **Gravitational potential energy**—a name used to describe energy when it is stored in objects in high places that can fall down.
10. **Kinetic energy**—a name used to describe energy when it is stored in moving things.
11. **Law of conservation**— the idea that energy can never be created or destroyed, only transferred from one store to another.
12. **Thermal energy**—a name used to describe energy when it is stored in hot objects.
13. **Transfer**—when energy is moved from one store into another or from one place to another we say it is transferred.
14. **Biofuel**—a fuel made from plants or animal droppings.
15. **Fossil**— the remains of a dead animal or plant that become trapped in layers of sediment and turned into rock.
16. **Fossil fuel**—coal, oil and natural gas—all fuels that were formed from the remains of dead plants and animals.

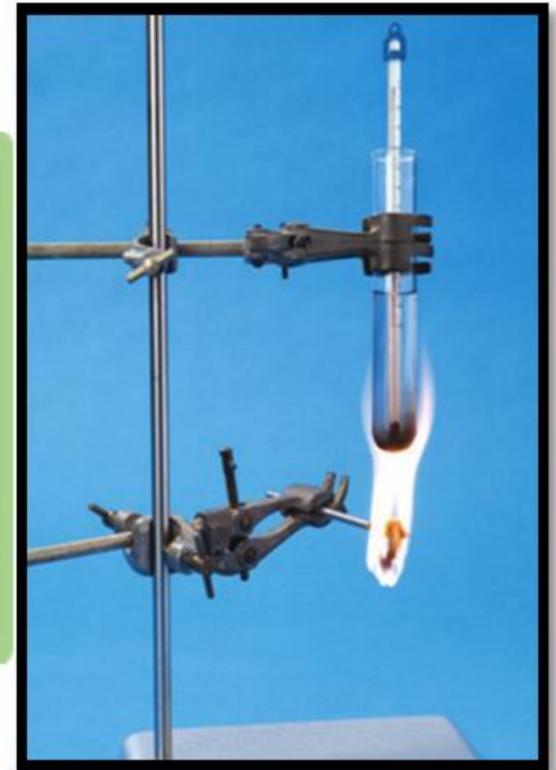
## Key Definitions:

1. **Fuel**— a substance that contains a store of chemical or nuclear energy that can easily be transferred.
2. **Fuel cell**—a machine that combines hydrogen and oxygen gases to produce electricity.
3. **Generate**—produce electricity
4. **Non-renewable**—an energy resource that will run out because we cannot renew our supplies of it.
5. **Renewable**—an energy resource that will never run out.
6. **Geothermal power**—generating electricity using heat from rocks underground.
7. **Hydroelectric power**—generating electricity by letting moving water (usually falling from a reservoir) turn turbines and generators.
8. **Solar cell**— flat panels that use energy transferred by light to produce electricity.
9. **Solar panel**—flat plates that use energy from the Sun to heat water.
10. **Solar power station**—a large power station that uses the Sun to heat water to make steam. The steam is used to make electricity in a similar way to fossil fuel or nuclear power stations.
11. **Wind turbine**— a kind of windmill that generates electricity using energy transferred by the wind.
12. **Climate change**— the changes in weather that will be caused because the Earth is getting hotter (sometimes called 'global warming'). This is happening because of the activities of humans, and is probably caused by too much carbon dioxide in the air.
13. **Efficiency**—a way of saying how much energy something wastes.

## Energy from food

Humans and other animals need energy to live. The energy resource for our bodies is the energy stored in food. We need to choose our food so that we get the right amount of energy.

The unit for measuring energy is the joule (J). There is a lot of energy stored in food, so we usually measure the energy in food using kilojoules (kJ).  $1 \text{ kJ} = 1000 \text{ J}$ .



### Working Scientifically:

Burning food experiment can indicate which food contains the largest store of energy.

### Energy Stores

### Method

- A** | Find the mass of a piece of food.
- B** | Carefully put the food on a pin (which has its other end in a piece of cork).
- C** | Put  $10 \text{ cm}^3$  of water into a boiling tube. Record its temperature.
- D** | Light the food using a Bunsen burner, and hold the burning food under the boiling tube. Make sure the flame is touching the boiling tube.
- E** | When the food has finished burning, record the temperature of the water again.
- F** | Let the food cool down, then carefully push what is left off the pin and find its mass. If there is no food left on the pin, write down 0 g for its mass.
- G** | Repeat steps A to F for other foods.

Energy stored in...	Commonly called...
the chemicals in food, fuels and batteries	chemical energy
moving objects	kinetic energy
hot objects	thermal energy
objects that are stretched, squashed or twisted	strain energy or elastic potential energy
objects moved to high places	gravitational potential energy
inside the particles that everything is made up from	nuclear energy or atomic energy

Fuels store energy, and this energy is transferred when the fuels burn. Burning fuels are used to heat things.

**Fossil fuels:** Are made from plants and animals that were trapped in mud and rocks millions of years ago include coal, oil and natural gas. Are non-renewable (they take millions of years to form, and so our supplies will run out).

Produce gases that cause pollution and global warming when burnt are relatively cheap to obtain originally got their energy from the Sun. The plants that became coal, oil and natural gas got their energy from the Sun, and the animals that became oil and natural gas got their energy from plants, which got their energy from the Sun.

**Nuclear fuel** is also non-renewable. Nuclear power stations produce dangerous waste materials.

**Electricity** is not a fuel. It has to be generated using other **energy resources**.

### Fossil fuels – Coal, oil and gas

These release carbon dioxide when burned. This leads to global warming.

Coal is the dirtiest as it releases lots of soot and sulfur dioxide which leads to acid rain.

They have a very high energy concentration so only need a small amount of fuel to generate lots of electricity.

### Nuclear power

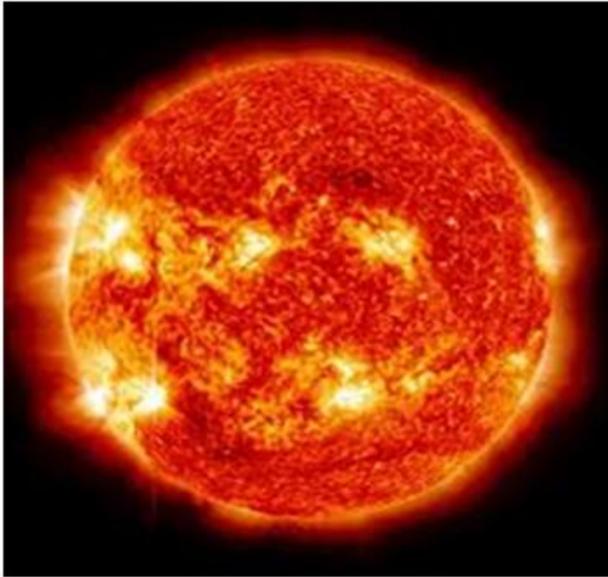
This generates large amounts of electricity from a tiny amount of fuel.

This uses nuclear fuel to generate electricity. It is slow to change power output and generates large amounts of highly toxic nuclear waste.

**Non-renewable energy resources:** will eventually

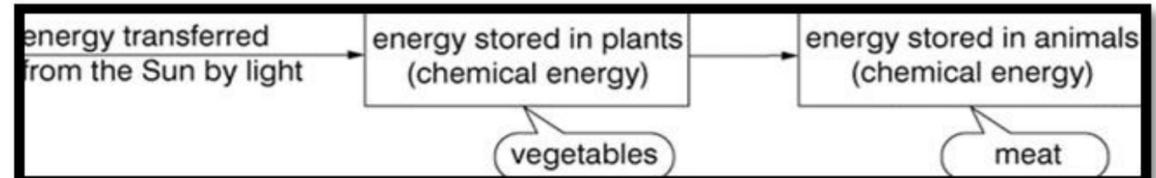
## Making fossil fuels last longer

We can make fossil fuels last longer and help to reduce global warming by using less of them. We could walk or cycle whenever we can, or use a bus instead of using a car. Walking and cycling would make us fitter and healthier, and there would be less pollution if there were not as many cars on the roads. We could also save energy by keeping our houses cooler and putting on more clothes if we are cold instead of turning up the heating.



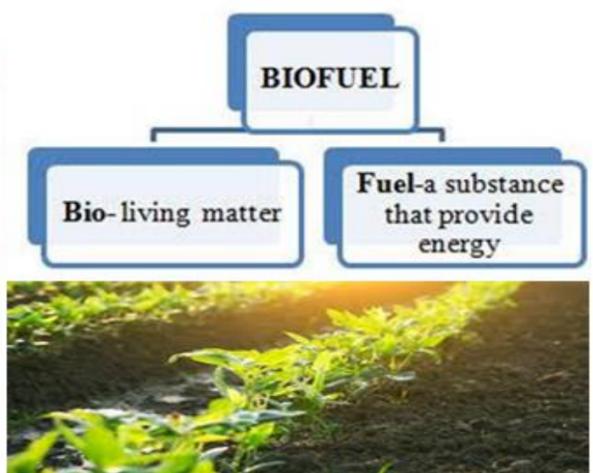
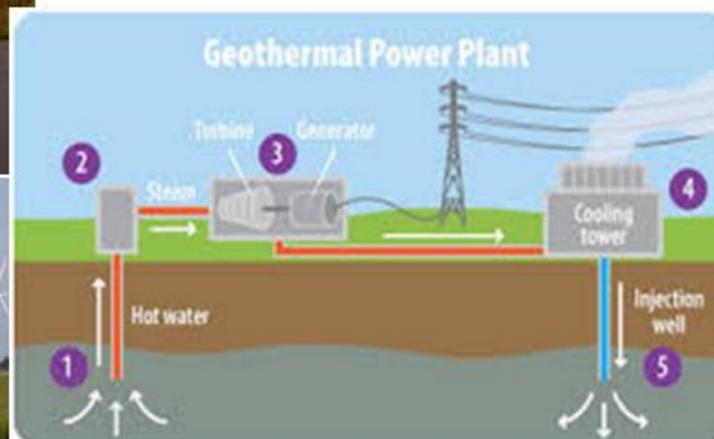
## Energy from the Sun

Most of the energy resources we use store energy that originally came from the Sun. Only geothermal power, nuclear power and tidal power do not depend on energy from the Sun. How energy is transferred to our food:



Energy resource	Advantages	Disadvantages
fossil fuels (used to generate electricity, to power transport and for heating)	<ul style="list-style-type: none"> <li>cheap compared with other resources</li> <li>convenient to use in cars and other vehicles</li> </ul>	<ul style="list-style-type: none"> <li>release polluting gases when they burn</li> <li>non-renewable</li> </ul>
nuclear (used to generate electricity)	<ul style="list-style-type: none"> <li>no polluting gases</li> </ul>	<ul style="list-style-type: none"> <li>power stations are very expensive</li> <li>produces dangerous waste materials</li> <li>non-renewable</li> </ul>
renewable resources (mainly used to generate electricity)	<ul style="list-style-type: none"> <li>no polluting gases</li> <li>renewable</li> </ul>	<ul style="list-style-type: none"> <li>most are not available all of the time</li> </ul>

**Renewable energy resources:** will not run out. Examples include solar, wind, hydroelectricity, tidal, wave, geothermal and biofuels. Are often more expensive than non-renewable energy resources.

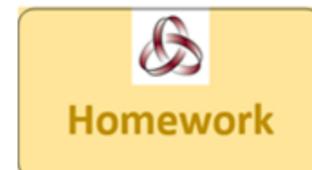


# Keyword Spellings:

joule	energy	chemical	kinetic	gravitational
thermal	transfer	renewable	non-renewable	fossil
nuclear	hydroelectricity	sulphur dioxide	biofuel	geothermal

Are you ready to answer these questions based on your learning so far? Can you get 100% correct?

## Cold Questions:



1. What is energy measured in?
2. Name the different ways energy is stored.
3. How is the energy stored in the sun transferred to plants?
4. Define the terms kinetic and thermal.
5. Where is gravitational potential energy stored?
6. What does non-renewable mean and give some examples of these energy resources.
7. What are the disadvantages of non-renewable energy resources?
8. What does renewable mean and give some examples of these energy resources.
9. What are the advantages of renewable energy resources?
10. Describe how coal, oil and natural gas formed.

## Hot Questions:

1. Produce a risk assessment for the burning food practical.
2. Justify the need to grow biofuels instead of using the space to grow crops for food.

## Careers corner



Earn yourself **50 class-chart points** by researching a career linked to your current science topic. Examples include:

**Ride engineer, Electrical engineer, Oceanographer.**

You can use <https://www.startprofile.com> to find out about lots of different science related careers.

## Websites:

**Pearson Active Learn:**

<https://www.pearsonactivelearn.com/app/Home>

**BBC Bitesize:**

<https://www.bbc.co.uk/bitesize/topics/zc3g87h>

**Seneca Learning:**

<https://www.senecalearning.com/>



**Unit Intent:** This unit uses the context of resources from the Earth and atmosphere to introduce ideas about the make-up of matter. It expands on particle theory and explains the differences between atoms, and molecules, elements and compounds. It looks at the symbols and formulae for elements and compounds. The involvement of chemical reactions in the formation and decomposition of compounds is also covered. It links these with the more abstract ideas of particle models, naming compounds and word equations.

## Key Definitions:

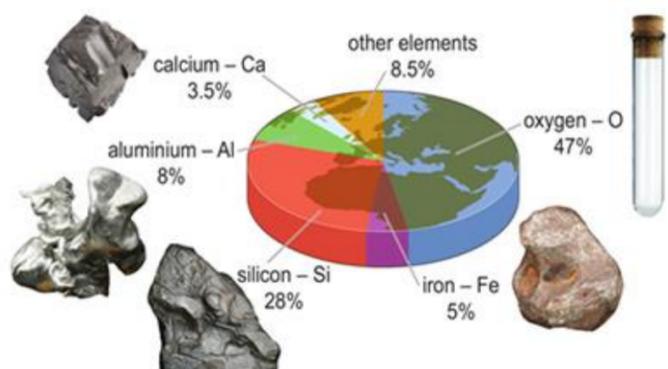
**Remember to use your 'memory method' techniques to remember 100% of your key terms.**

1. **Chemical reaction**—a change in which one or more new substances are formed.
2. **Physical change**—a change in which no new substances are formed, e.g. changes of state.
3. **Properties**—a description of how a material behaves and what it is like. Hardness is a property of some solids.
4. **Continuous**—data that can have any number between two limits.
5. **Discrete**— data that involves a limited number of values (numbers).
6. **Qualitative**— data that is described in words.
7. **Quantitative**—data that is described in numbers.
8. **Scatter graph**—a graph of plotted points that tries to show a relationship between two quantitative variables.
9. **Variable**—a factor which can change or be changed in an experiment.
10. **Atom**—a small particle from which all substances are made.
11. **Compound**—substance that can be split up into simpler substances, since it contains the atoms of two or more elements joined together.

## Key Definitions:

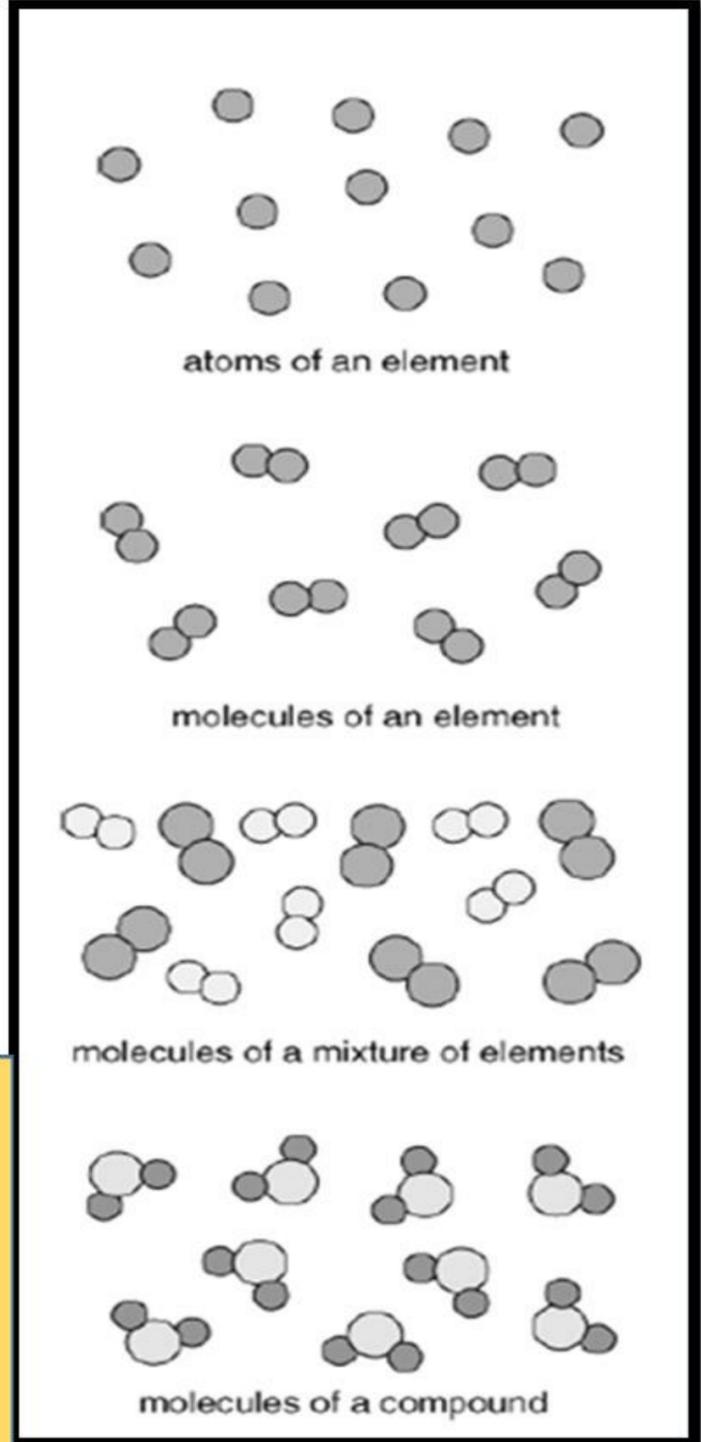
1. **Recycle**—using a material again, often by melting it and using it to make new objects.
2. **Brittle**—not easily bent, or not flexible, breaks under forces.
3. **Conductor of heat**—substance that allows heat to pass through it easily.
4. **Conductor of electricity**—substance that allows electricity to pass through it easily.
5. **Flexible**—bends without breaking.
6. **Malleable**—able to be beaten and bent into shape.
7. **Magnetic**—a material, such as iron, that is attracted to a magnet.
8. **Bond**—the force that joins atoms together in molecules and joins elements together in compounds.
9. **Metal ore**—rocks containing metal compounds which can be used as a source of the metal.
10. **Oxide**—compound containing one element bonded with oxygen.
11. **Carbonate**—compound containing an element bonded with carbon and oxygen.
12. **Decompose**—to break down into simpler substances.
13. **Products**—the new substances formed in a chemical reaction.
14. **Reactants**—the substances formed in a chemical reaction.
15. **Thermal decomposition**—breaking down a compound into simpler substances using heat.
16. **Word equations**—description of a chemical reaction using the names of the reactants and products either side of an arrow. A word equation is a type of model.

All substances are made up of tiny particles called atoms. Substances can be made of single atoms bonded together in small groups, called molecules. Substances can also be made of many trillions of atoms all bonded together.

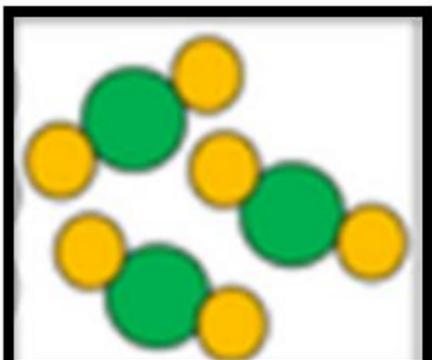


Elements are simple substances made up of only one kind of atom. There are about 90 different types of atom found on Earth. Therefore there are about 90 different elements.

Elements always have a capital letter at the start of them. If there is only one capital letter followed by a lower case one, there is only one element. If there are two capitals within the same molecule, this is a compound. All elements are found on the periodic table. If you can't find the formula on the periodic table it isn't an element!



Most substances are compounds, which contain more than one kind of atom (more than one element bonded (joined) together).



$\text{Na(OH)}_2$  has 3 elements and 5 atoms. Atoms are the total number of atoms in the molecule. Elements is the number of different atoms. Count the capital letters = number of elements.

### Metals and non-metals

Elements can be classified as **metals** or **non-metals**, depending on their properties.

The common properties of **metals** are:

- high melting point solids,
- strong and **flexible**,
- shiny (when polished),
- good **conductors** of heat,
- good conductors of electricity.

e.g. copper, iron, aluminium, zinc, and tin.

**Note:** mercury is the only liquid metal.

The common properties of **non-metals** are:

- low melting point (gases, liquids and solids),
- **brittle** (when solid),
- not shiny,
- poor conductors of heat,
- poor conductors of electricity.

e.g. sulfur, oxygen, nitrogen, carbon and iodine.

The **uses** of an element depend on its **properties**. For example, copper and aluminium are used for electrical cables as they are strong, flexible and conduct electricity very well.

## Chemical reactions

Chemical reactions always form one or more new substances.

Many chemical reactions occur in everyday life, for example, burning, cooking, rusting, digesting food.

Typical signs of chemical reaction include:

- a colour change,
- a gas being given off,
- a solid forming in a liquid,
- an energy change.

## How chemical reactions start

Some reactions start just by mixing the right substances together.

e.g. acid and alkalis

Heat is often needed to start a reaction, but once started many reactions give out heat.

e.g. burning natural gas

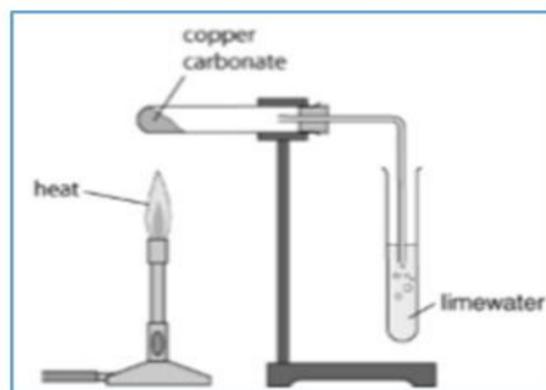
Others need a continuous supply of energy to keep them going.

e.g. breaking down metal ores

**Thermal decomposition** reactions involve breaking down a single compound using heat.

Heating copper carbonate produces copper oxide and carbon dioxide.

Thermal decomposition reactions are used in industry to extract metals.



## Modelling chemical reactions using word equations

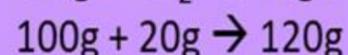
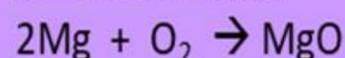
reactants → products

Metal and non metal = end in 'ide'  
e.g. lithium + chlorine → lithium chloride

Metal + oxygen = end in 'oxide'  
Sodium + oxygen → sodium oxide

Metal + non metal + oxygen = end in 'ate'  
e.g. lead + nitrogen + oxygen → lead nitrate

Mass is never lost, or created. It only changes between forms.



The mass of the two reactants combines to become the mass of the product.

The only time this doesn't LOOK like it is true, is when a gas is given off and it escapes. But we still have the same amount of mass!

## Working

### Scientifically

Gases in air	%
nitrogen	78
oxygen	21
other gases	1

Example of a table.

Method of presentation	When used ...
<b>tables</b>	to show exact values / to order a list / to show best and worst / to sort data into groups
<b>bar charts</b>	to compare qualitative or discrete variables / to compare grouped continuous data
<b>pie charts</b>	to show the proportions of a total made up by different items
<b>line graphs</b>	to show how one variable changes as another linked variable changes (often time)
<b>scatter graphs</b>	to look for a relationship (link) between two quantitative variables

# Keyword Spellings:

Literacy Focus

atom	element	compound	magnetic	conductor
lustrous	malleable	brittle	thermal	decomposition
chemical	reaction	oxygen	metal	non-metal

Are you ready to answer these questions based on your learning so far? Can you get 100% correct?



## Homework

### Cold Questions:

1. What are all substances made up of?
2. Define the term element.
3. What is a compound?
4. Where do you find out if a substance is an element?
5. List some key properties of metals.
6. List some key properties of non-metals.
7. What is made in a chemical reaction?
8. What is thermal decomposition?
9. Finish the word equation: magnesium + chlorine  $\rightarrow$
10. Finish the word equation: magnesium + oxygen  $\rightarrow$

### Hot Questions:

1. Explain what the concept of conservation of mass in a chemical reaction is.
2. Explain how you know how many atoms and elements are in the following compounds:-  $\text{HNO}_3$  and  $\text{C}_6\text{H}_{12}\text{O}_6$ .

### Careers corner

Earn yourself **50 class-chart points** by researching a career linked to your current science topic. Examples include:

**Chemical engineer, Analytical chemist, Chemistry teacher.**

You can use <https://www.startprofile.com> to find out about lots of different science related careers.



Curriculum to Careers

### Websites:

Pearson Active Learn:

<https://www.pearsonactivelearn.com/app/Home>

BBC Bitesize:

<https://www.bbc.co.uk/bitesize/topics/zstp34j>

Seneca Learning:

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**Unit Intent:** Pupils will understand the human and physical geography of Russia. They will investigate the challenges and the opportunities faced and how the population of Russia can combat difficulties faced and embrace the opportunities that present themselves.

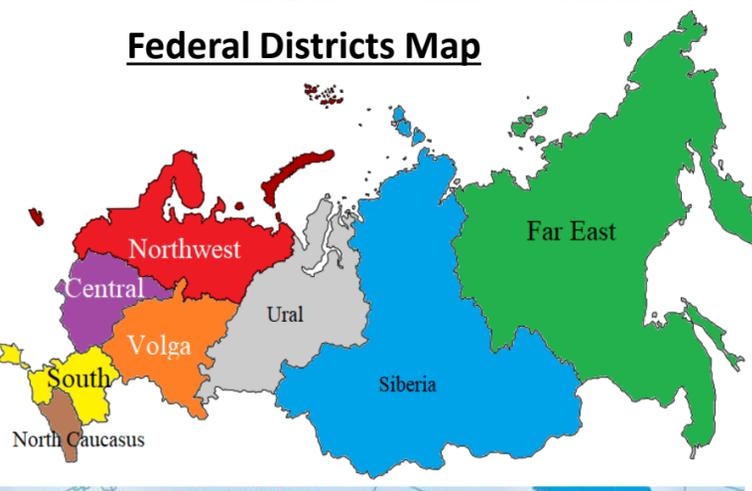
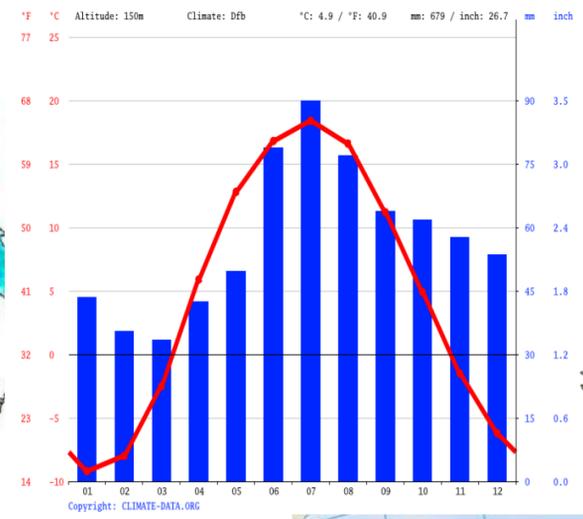
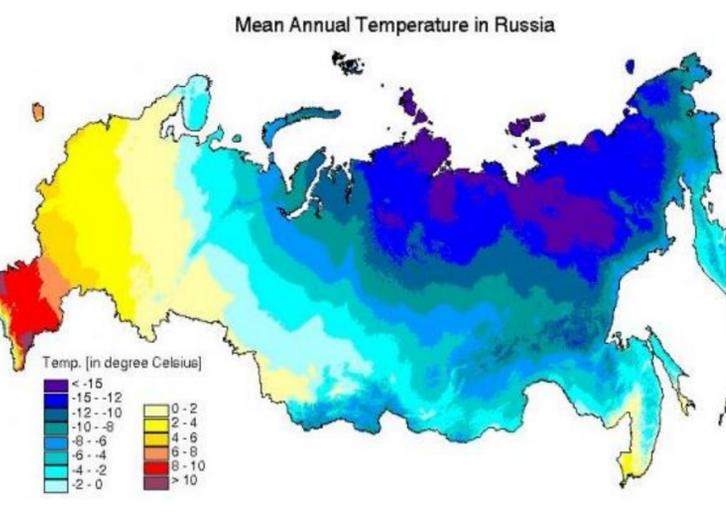
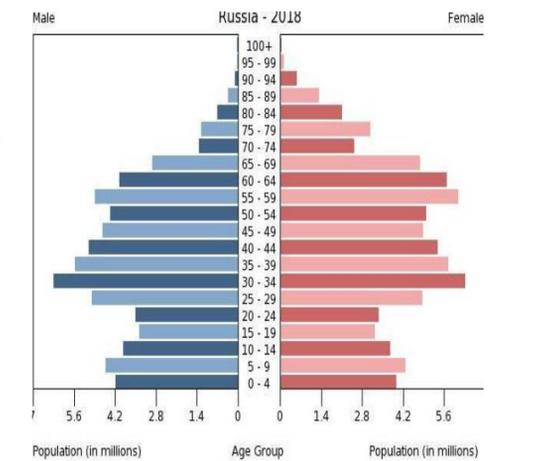


### Population Facts

- Russia has 160 different ethnic groups and indigenous peoples.
- Russia is one of the most sparsely populated countries in the world.
- The population is most dense in the European part of the country
- 74% of the population is urban.
- Russia's population stands at 145,934,462.
- There are 27 official languages as well as Russian and over 100 minority languages spoken in Russia.
- Christianity is Russia's largest religion with 75% of the population belonging to the Orthodox Christian faith.
- The standard of living in rural areas is very different to urban areas. Some homes don't have electricity or running water.

### Physical Features

- The Ural Mountains form the boundary between Europe and Asia. The Urals are 1,550 miles long and the highest peak is Mount Narodnaya at 6,217 feet
- The Volga River is the longest river in Europe (2,294 miles). 11 of the 20 largest cities in Russia are close to this river.
- The Caspian Sea is landlocked between Asia and Europe and is both a sea and a lake. The Romans called it a sea because of its size and salty water but it is only 1/3 as salty as a normal sea. It's officially the world's largest lake but it isn't freshwater so people argue it is not.



Russia's Trade		
Imports	Exports	Top 10 Trading Partners
<ul style="list-style-type: none"> <li>• Vehicles</li> <li>• Consumer goods</li> <li>• Foodstuffs</li> <li>• Chemical products</li> <li>• Industrial consumer goods</li> </ul>	<ul style="list-style-type: none"> <li>• Energy: oil, gas, coal</li> <li>• Rolled steel</li> <li>• Ferrous and nonferrous metals and minerals</li> <li>• Oil and petroleum products</li> <li>• Timber</li> <li>• Fertilizers</li> <li>• Armaments</li> </ul>	<ul style="list-style-type: none"> <li>• China</li> <li>• Netherlands</li> <li>• Germany</li> <li>• Turkey</li> <li>• Belarus</li> <li>• South Korea</li> <li>• Italy</li> <li>• Kazakhstan</li> <li>• United Kingdom</li> <li>• United States</li> </ul>



**Keyword Spellings and Definitions:****Remember to use your 'memory method' techniques to remember 100% of your key terms.**

Siberia - A large area of Russia spanning 77% of the country from the Ural mountains to the Pacific Ocean. It is known for its exceptionally cold winters, January's average temperature is -25°C.	Climate graph – A graph that shows the temperature and rainfall over a year. The bar graph represents precipitation and the line graph represents temperature.	Climate – The average temperature and rainfall of an area. This is usually determined by finding the averages over 30 years.
Weather - The day to day temperature and rainfall.	Federal districts – Russia is split into 8 main areas. They exist purely for the convenience of governing.	Population density - How many people live in an area.
Trade – The buying and selling of goods and services.	Import – Bringing goods and services in to a country.	Export – Sending goods or services to another country.
Population pyramid – A graph to show the distribution of a country's population between age and gender groups. The top is called the apex and the bottom is called the base.	Sparsely populated - very few people living in an area.	Indigenous people - These people are inheritors and practitioners of unique cultures and ways of relating to people and the environment. They have retained social, cultural, economic and political characteristics separate from the dominant culture.
Urban – A built up area like a town or city.	Rural – An area of countryside.	Standard of living - The wealth and material comfort available to a person.
Communism – A social, political, economic ideology where everyone gets the same regardless of your job. (Russia followed this from 1917 to 1991)	Official languages - A language given a special status in a particular country, state, or other jurisdiction. Typically a country's official language refers to the language used in government.	Choropleth map - A map which uses differences in shading or colouring to indicate the average values of something in those areas.

**Accept the statement**

Some parts of Russia are uninhabitable.

**Challenge the statement**

Russia is densely populated.

**Extend this answer**

There are a number of biomes in Russia.

**Can you get 100% right?****Hot Questions**

- Predict the changes to an Russia's population pyramid in the future.
- Explain why people prefer to live in urban areas rather than rural areas in Russia.
- Explain why the creation of federal districts was a good idea to govern Russia.
- Create a 3 step plan to improving the development of a country. Explain each stage in detail.
- Choose a Russian export and explain why Russia exports this product. Do the same for an import.
- Explain why the quality of life is lower in rural Russia and how it could be improved.

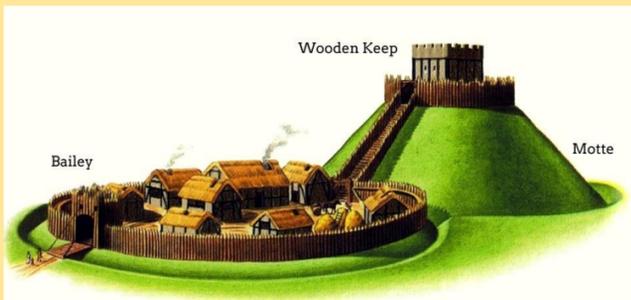
**Cold Questions**

- Describe the climate graph of Russia
- List the 8 federal districts
- Explain what corruption means.
- List the 5 main Biomes in Russia and write a sentence explaining what each one looks like.
- List the top 10 trading partners with Russia and next to each one write if they are an LIC, HIC or NEE/MIC
- Describe the location of Moscow
- Research 3 facts about Siberia.



**Unit Intent:** In this unit we will study the changes and developments of England during the medieval period. We will mainly focus on the skill of change and continuity.

### Motte and Bailey Castles



**Strengths:** they could be built quickly and they were on a hill  
**Weaknesses:** they were made out of wood therefore could be burnt or would rot.

### Stone Keep Castles

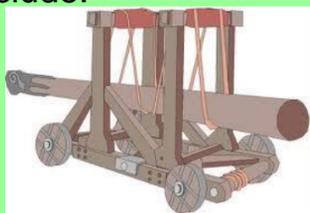


**Strengths:** they were much stronger than wood, everything was built inside therefore was protected from the enemy.

**Weaknesses:** new weapons were invented to break down the walls and climb over them.

### Methods of attack

Enemies designed new weapons to attack castles. These include:



battering ram



trebuchet



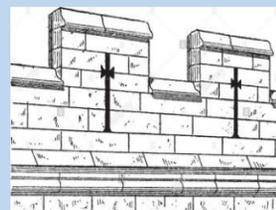
mining

### Methods of Defence

Because of the new methods of attack, castle designers had to add traps and devices to their castles to stop the enemy from getting inside. These included:



murder holes



arrow slits



portcullis

### Life in a village

Most people in Medieval England lived in villages. Villages were small and the main building was the church which was in the middle. Most people worked as farmers farming the land of the Lord of the Manor. They would give him the crops they grew to sell and grow some in their own gardens for their families. Houses were made of wattle and daub and were just one large room for the whole family and the animals!

### Life in a town

Towns like London started to develop in Medieval England. People would move here hoping to start a new life. Towns were busy places. There were market stalls in the streets where people could buy things. However they were unhygienic. People would throw their waste out of the windows. The town was surrounded by a wall. Everyone inside the wall had to obey the town charter a set of rules for that town.

### Games and Leisure Time

Life in Medieval England was tough therefore the people living at the time needed to use their spare time on a Sunday after going to church having fun with their friends and families. Many different new games and sporting activities developed at this time. These included: Jousting, Wrestling, Mob Football, Shin Hacking, Hunting, Bowling, Ice Skating

### Useful Websites

- <https://www.bbc.co.uk/bitesize/guides/zm4mn39/revision/1>
- [https://www.ducksters.com/history/middle\\_ages/daily\\_life\\_in\\_the\\_middle\\_ages.php](https://www.ducksters.com/history/middle_ages/daily_life_in_the_middle_ages.php)
- [https://www.ducksters.com/history/middle\\_ages\\_castles.php](https://www.ducksters.com/history/middle_ages_castles.php)

## Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

<b>castle</b> - a large building built to keep enemies from attacking those inside	<b>motte</b> – a mound/hill on which an early castle would be built upon	<b>bailey</b> – a small village at the bottom of a hill where the soldiers and animals lived	<b>palisade</b> – the wooden outer fence of a Motte and Bailey castle	<b>moat</b> – a ditch around a castle often filled with water
<b>crenels</b> – an indentation at the top of a castle to fire arrows through	<b>merlons</b> – a solid part of the top of a castle where archers can hide	<b>charter</b> – a set of laws written for a town or city	<b>village</b> – a small community usually surrounding the church building	<b>leisure</b> – a persons free time to do as they will

**ACE Questions – Are you 100% ready to answer these questions based on your learning so far?**

<b>Accept</b>	<b>Challenge</b>	<b>Extend</b>
<p><b>“The biggest advantage of a Motte and Bailey castle was that it was built on top of a hill”</b></p> <p>How could you accept this statement?</p>	<p><b>“The battering ram was the best weapon to attack a Stone Keep castle with”</b></p> <p>How could you challenge this statement?</p>	<p><b>“Leisure activities in Medieval England were about people letting off some steam”</b></p> <p>How could you extend this statement?</p>

## Can you get 100% right?

### Cold Questions:

1. What were Motte and Bailey castles made out of?
2. Give a weakness of a Motte and Bailey castle.
3. What did they start to build castles out of instead?
4. Give a strength of a Stone Keep castle.
5. Give an example of a weapon created to attack castles.
6. Give an example of method of defence that was added to protect castles.
7. Who owned most of the land in a medieval village?
8. What were medieval houses made out of?
9. Give an example of a town that developed in Medieval England.
10. Give an example of a leisure activity from Medieval England.

### Hot Questions:

1. Why did William need to build castles for protection? Explain your answer.
2. Which weapon used for attacking castles was the best and why? Explain your answer.
3. How would you feel if you lived in a medieval village? Explain your answer.
4. Why might you prefer to live in a medieval town to a medieval village? Explain your answer.
5. Most people in Medieval England only had one day off a week, Sunday. Why do you think the doing something on this day was so important to these people? Explain your answer.

**Unit Intent:** Pupils should be able to describe which school subjects they study using time phrases and the present tense. They should be able to give justified opinions about subjects they like and dislike taking into account grammar rules for opinion phrases.

<b>En mi insti</b> In my school  <b>Los lunes</b> On Mondays  <b>Los martes</b> On Tuesdays  <b>Los miércoles</b> On Wednesdays  <b>Los jueves</b> On Thursdays  <b>Los viernes</b> On Fridays  <b>Mi día favorito es el lunes porque</b> My favourite day is Monday because  <b>Por la mañana</b> In the morning  <b>Por la tarde</b> In the afternoon  <b>Mis amigos</b> My friends  <b>Mis amigos y yo</b> My friends and I	<b>estudio</b> I study  <b>estudiamos</b> we study  <b>estudian</b> they study	<b>ciencias</b> Science  <b>dibujo</b> Art  <b>informática</b> ICT  <b>educación física</b> P.E.  <b>español</b> Spanish  <b>francés</b> French  <b>geografía</b> Geography  <b>historia</b> History  <b>inglés</b> English  <b>matemáticas</b> Maths  <b>religión</b> R.E.  <b>teatro</b> Drama  <b>tecnología</b> Technology  <b>ocho asignaturas</b> 8 subjects	<b>Singular subjects</b>			
			<b>No me gusta</b> I don't like  <b>Odio</b> I hate  <b>Me gusta</b> I like  <b>Me mola</b> I really like  <b>Me chifla</b> I really like  <b>Me encanta</b> I love	<b>el dibujo</b> art  <b>el español</b> Spanish  <b>el francés</b> French  <b>el inglés</b> English  <b>el teatro</b> drama  <b>la tecnología</b> technology  <b>la informática</b> ICT  <b>la geografía</b> geography  <b>la historia</b> history  <b>la religión</b> R.E.	<b>porque es</b> because it is  <b>ya que es</b> since that it is	<b>aburrido</b> boring <b>difícil</b> difficult <b>interesante</b> interesting <b>divertido</b> fun <b>fácil</b> easy <b>práctico</b> practical <b>importante</b> important <b>útil</b> useful  <b>aburrida</b> boring <b>difícil</b> difficult <b>interesante</b> interesting <b>divertida</b> fun <b>fácil</b> easy <b>práctica</b> practical <b>importante</b> important <b>útil</b> useful
<b>Plural subjects</b>						
			<b>No me gustan</b> I don't like  <b>Odio</b> I hate  <b>Me gustan</b> I like  <b>Me molan</b> I really like  <b>Me chiflan</b> I really like  <b>Me encantan</b> I love	<b>las matemáticas</b> maths  <b>las ciencias</b> science	<b>porque son</b> because it is  <b>ya que son</b> since that it is	<b>aburridas</b> boring <b>difíciles</b> difficult <b>interesantes</b> interesting <b>divertidas</b> fun <b>fáciles</b> easy <b>prácticas</b> practical <b>importantes</b> important <b>útiles</b> useful

## Present Tense

Spanish verbs are different to English verbs. When we want to use a verb we have to first look at the **infinitive** of the verb and choose the correct ending. (Look at the steps below for the Present tense).

*Estudiar* is the infinitive of the verb which means 'to study'. It is also an **AR** ending verb.

Verb table	
Person	Present tense
Yo (I)	Estudi <u>o</u> (I study)
Tu (you)	Estudi <u>as</u> (you study)
Él / Ella (He/ She)	Estudi <u>a</u> (he / she studies)
Nosotros (We)	Estudi <u>amos</u> (we study)
Vosotros (You)	Estudi <u>áis</u> (you lot study)
Ellos / ellas (They)	Estudi <u>an</u> (they study)

### How to add the correct ending

Step 1: Take your full verb 'Estudiar'

Step 2: Remove the **AR** ending from 'Estudiar' → **Estudi**

Step 3: Add the correct ending you need.

E.g. to say I study would be 'Estudio'

to say they study would be 'Estudian'

(the verb endings can be found in the verb table above, they are underlined and in pink font)

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## Using opinion phrases

Some nouns in Spanish are either Singular or Plural.

**el** or **la** in front of a word = **singular noun**    **los** or **las** in front of a word = **plural noun**

Example of a singular subject = **el inglés**

Example of a plural subject = **las matemáticas**

When giving your opinion on a subject you first need to decide if a noun is singular or plural.

If you have a singular subject you need to use 'me gusta' or any other opinion phrase from your sentence builder.

If you have a **plural subject** you need to add an 'n' onto 'me gusta' so that it is 'me gustan'.

E.g. **I like Spanish** = **Me gusta el Español.**

**I like science** = **Me gustan las ciencias.**

Note: Odio (I hate) does not change. You do not need to add an 'n' for plural subjects.

**Keyword challenge:** In addition to learning the vocabulary on your sentence builder use your 'memory method' technique to remember 100% of the key terms below.

<b>Prefiero</b> I prefer	<b>A mi modo de ver</b> In my opinion	<b>Por el otro lado</b> On the other hand	<b>A veces</b> sometimes	<b>Pienso que</b> I think that
<b>Además</b> In addition	<b>Por un lado</b> On one hand	<b>Sin embargo</b> However	<b>Siempre</b> always	<b>En mi opinión</b> In my opinion

**ACE Questioning - Are you 100% ready to answer these questions based on your learning so far?**

<b>Accept</b>	<b>Challenge</b>	<b>Extend</b>
<p>Me gustan las ciencias porque son interesantes.</p> <p>Do you accept that the sentence above follows all the grammatical rules you have learnt?</p>	<p>Odio el dibujo porque no es práctico.</p> <p>Challenge the statement above.</p>	<p>Estudio religión y me gusta la informática.</p> <p>Extend the sentence above.</p>

### Cold Questions

#### Task 1: Translate to English.

1. En mi insti estudio ciencias.

\_\_\_\_\_

2. Los jueves estudiamos español.

\_\_\_\_\_

3. No me gusta el inglés porque es aburrido.

\_\_\_\_\_

4. Me encanta la informática porque es interesante.

\_\_\_\_\_

5. Me molan las ciencias porque son prácticas.

\_\_\_\_\_

#### Task 2: Fill in the gaps with an appropriate word.

1. Los \_\_\_\_\_ estudio religión y \_\_\_\_\_.

2. En mi \_\_\_\_\_ estudiamos \_\_\_\_\_.

3. Me \_\_\_\_\_ las ciencias porque \_\_\_\_\_ interesantes.

4. \_\_\_\_\_ chifa la \_\_\_\_\_ porque es \_\_\_\_\_.

5. \_\_\_\_\_ la historia ya que es \_\_\_\_\_.

### **Hot Questions**

#### **Task 1: Write 5 sentences of your own on the school topic in Spanish.**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

## Unit Intent

During this unit you will discover the skills and some of the different elements that make a successful ensemble performance through listening, performing and composing activities.



## Ensembles:

There are many different types of ensembles across many different genres. You have really large ensembles and really small ensembles.



**Orchestra** – is a large group of instrumental players which can range up to 100 players. Classical music is the most popular music orchestras will perform.

**Big Band** – is a medium group of players which play Jazz music. Groups like Glen Miller were very popular in the 1930's

**Samba Drumming** – is a large group of musicians all playing percussive instruments. You will hear this music at festivals and parades and comes from Brazil.

**Pop Groups** – these can range in size and play instruments or just be vocal ensembles. You need 2 or more musicians to create an ensemble.

## Musical skills.....

- Be able to play/sing at the same tempo as others.
- Be able to sing/play in tune with others.
- Be able to play a piece of music accurately with the correct notes and rhythm.



### Listening Repertoire

1. **Shotgun** live by George Ezra
2. **RESPECT** by West End Gospel Choir performance
3. **Game of Thrones** by Film Symphony Orchestra

## Employability skills.....

- Be organised and be able to work with other people.
- Be prepared to rehearsals making sure you know your part.
- Be on time and focused during rehearsals not wasting any time, taking on a leadership role where possible.
- Be able to communicate with your ensemble to create the best performance possible.

Which musical elements does each performance use successfully?

Which performance did you like the most and why?

## The Conductor

What's challenging about part singing?

### TRY THIS!

#### Part Singing

I throw my hands up in the air sometimes,  
Saying ee-yo baby let go  
And it goes on and on and on  
And it goes on and on and on yeah



Having a leader or a conductor in your ensemble will help to improve your performance. This person must be able to tell people how they need to improve their part or the whole group. It is important for the conductor to also get suggestions from the ensemble of what they think sounds good or could be improved as well, teamwork is very important.



Dynamite in a 'Round'

<https://www.youtube.com/watch?v=xZzdozhZ0hk>

Remember to use your 'memory method' techniques to remember 100% of your key terms.



<b>Ensemble</b> - A group of musicians (more than 1) playing together.	<b>Melody</b> – the main tune that of a piece of music that is usually accompanied by instruments.
<b>Duet</b> - 2 musicians performing together.	<b>Unison</b> – Different instruments all playing the same thing together.
<b>Genre</b> – a style or category of music eg, classical genre.	<b>Tempo</b> – The speed of a piece of music and what all musicians have to follow when in an ensemble.
<b>Texture</b> – The different layers in a piece of music.	<b>Structure</b> – the layout of a piece of music, this important to know when you are learning new parts in an ensemble to make it easier to direct a rehearsal.
<b>Harmony</b> – Where 2 or more pitches are added on top of each other.	<b>Round</b> – is a song that can be split in to groups and played or sung over the top of each other, starting at different times.

## ACE Questions

Are you 100% ready to answer these questions based on your learning so far?

<u>Accept the statement</u>	<u>Challenge the statement</u>	<u>Extend this answer</u>
'Playing in an ensemble means you have to be the best musician on your instrument'  Are you able to <b>justify</b> your answers?	'Harmony is only used in vocal groups'  Are you able to <b>give examples</b> of music to support your answer?	'Being a conductor makes you the most important member of an ensemble'  Give <b>musical examples</b> to support this statement.

COLD Questions

1. What does ensemble mean?
2. How many players make an ensemble?
3. What is a group of singers called?
4. What does unison mean?
5. Which genres of music have ensembles?

HOT Questions

1. Explain what a round is.
2. Describe what musical skills are important to create a successful ensemble performance.
3. Explain and justify what the most important skill is to perform in an ensemble
4. Explain why team work important for an ensemble.
5. Describe how you would become a leader/conductor of an ensemble.

**Can you get 100% right?**



**Music Careers**  
 There are endless opportunities and different paths you could take in the music industry, here are a few:  
 Performer/live events productions/music journalism/songwriting/music management/sound engineer/music producer/music therapist/blogger/music teacher.



**Unit Intent:** You will develop your understanding of Musical Theatre by exploring the musical Bugsy Malone. You will learn how to develop your characterisation through the use of accent, facial expression, body language and contrast. You will also learn how to successfully stage a scripted scene.

**Set in 1920s America during the prohibition period (ban of alcohol). All the Gangsters are played by children. Instead of real bullets they use "splurge guns" that cover the victim in cream. The story tells of the rise of "Bugsy Malone" and the battle for power between "Fat Sam" and "Dandy Dan".**



The period of 1920 – 1959 was known as what?	The Golden Age of Musical Theatre
What are Flappers?	Young women in the 1920's who were known to embrace their energetic freedom
Bugsy Malone was made in 1976 but when and where is it set?	1929 New York City
What is unique about Bugsy Malone as a musical?	It is a spoof musical where the adult characters are played by children
What important historical issues are highlighted?	Gang Culture, Prohibition, Treatment of Women
What is used as a replacement/alternative for weapons?	Splurge Guns – filled with whipped cream
What was the Roaring Twenties?	Decade of economic growth and widespread wealth, driven by recovery from wartime devastation
What caused Broadway theatres to close in the 1930's?	The Great Depression
The closure of theatres was in response to what 1929 occurrence?	The Wall Street Crash
During the 1930-40's why was Musical Theatre so Important to many?	It was used as a form of escapism from the real life struggles faced

Pre 1960s Musical Theatre



**Watch it Online**  
• You can watch the film for free on YouTube:  
<https://youtu.be/DgzGq007yzi>

**Slapstick Comedy**  
**Slapstick is a style of physical comedy used in movies, tv shows, cartoons and plays. It often involves chases, silly and exaggerated movements and activities, and simple practical jokes. Sometimes it can be quite violent in a ridiculous, comical kind of way.**

**Gangster Films**  
**A gangster film or gangster movie is a film belonging to a genre that focuses on gangs and organised crime. It is a subgenre of crime films, that may involve large criminal organisations, or small gangs formed to perform a certain illegal act. The genre is differentiated from Westerns and the gangs of that genre.**

- Main Characters**
- ❖ **Bugsy Malone, an Italian-Irish ex-boxer/boxing scout.**
  - ❖ **Blousey Brown, a sassy young dame interested in Hollywood.**
  - ❖ **Tallulah, Fat Sam's gun moll, the speakeasy's chanteuse and Bugsy's old flame.**
  - ❖ **Fat Sam Staccetto, crime boss. He is dubbed by the press as "The Alleged Mobster King of the Lower East Side".**
  - ❖ **Dandy Dan, rival gang boss who steals Fat Sam's territory.**
  - ❖ **Leroy Smith, an African-American tramp who discovers he has a talent for boxing**
  - ❖ **Knuckles, Fat Sam's main hoodlum who constantly cracks his knuckles.**
  - ❖ **Fizzy, Caretaker at Fat Sam's Grand Slam, tap dancer**

**Keyword Spellings and Definitions:****Remember to use your 'memory method' techniques to remember 100% of your key terms.**

<b>Accent:</b> The way in which people in a particular area, country, or social group pronounce words.	<b>Intonation:</b> The sound changes produced by the rise and fall of the voice when speaking, especially when this has an effect on the meaning of what is said.	<b>Facial Expressions:</b> A facial expression conveys an emotion that tells us about the character and the way they react to the situation. It may also tell us something about that situation, e.g. if the character is very shocked when something happens.	<b>Body language:</b> The movements or positions of your body that show other people how you are feeling, without using words.	<b>Characterisation:</b> Creating a character through your movement, facial expression and vocal expression.
<b>Prohibition:</b> Prohibition in the United States was a nationwide ban on the production, importation, transportation, and sale of alcoholic beverages from 1920 to 1933.	<b>Musical Theatre:</b> A genre of drama in which singing and dancing play an essential part	<b>Slapstick Comedy:</b> A type of comedy that involves lively, animated action such as the throwing of pies in actors' faces, mugging, silly situations and jokes.	<b>Script work:</b> Learning how to create an effective performance using a script looking carefully at the setting, stage directions and dialogue.	<b>Staging a scene:</b> "Staging" in Drama means the process or manner of putting a play on stage. This refers to the positioning of the characters and props, the way the actors move, the way they use their voice and how the character looks.

**ACE Questions – Are you 100% ready to answer these questions based on your learning so far?*****"Bugsy Malone is a popular musical as there are so many interesting characters."*****Accept***Why would you accept this viewpoint? Explain your answer.***Challenge***Why would you challenge this viewpoint? Explain your answer.***Extend***How would you extend this viewpoint? Explain your answer.***Can you get 100% right?****Cold Questions**

1. What accent would you need to use when playing a character in Bugsy Malone?
2. What skills would you use when performing as a character from this musical?
3. How would you use characterisation to enhance your performance?
4. How does staging a scene help to develop your performance?

**Hot Questions:**

1. Choose one character from the musical and explain what skills you would use to perform as this character.
2. Evaluate the effectiveness of one of your performances. Remember to discuss the effect on the audience.
3. Discuss how Bugsy Malone the musical reflects the style of slapstick comedy.

Topic: MAXIMUM LEVELS      Duration: 6 weeks      Assessment Focus: Introducing & Developing

### Unit Overview:

In this unit, pupils will accurately replicate running, jumping and throwing skills for events in order to improve performances. Will explore variations in technique and use the information to become more technically proficient. Pupils will engage in performing and improving personal bests in relation to speed, height and distances.

### Language for Learning:

 <b>Literacy Focus</b>	Pacing	Take off	Execution	Field	Speed	Approach
	Coordination	Preparation	Follow through	Track	Power	Distance

#### Track Events

These are running events typically ran on a 400m track.

#### Sprints

These are quick races that use your maximum speed. Most of these are done anaerobically (without oxygen).

100m, 200m, 300m, 400m.

Usain Bolt is an example of a sprinter. He holds the world record for 100m sprint at 9.58 seconds!



#### Long Distance events

These are endurance events, they are still completed pretty quickly but rely on pacing and stamina. These are done aerobically (using oxygen).

800m, 1500m.

Mo Farah is an example of a long-distance runner.



#### Field Events

These are throwing and jumping events.

#### Throwing events

**Howler throw:** This is the school version of javelin. The howler is a long thin object that makes a howling noise when thrown correctly.

**Shot Put:** This is a push not a throw. It uses a weighted ball that is pushed from the shoulder

**Discus:** imagine a heavy Frisbee. This heavy disc shaped weight is thrown to get the furthest discus.



#### Jumping Events

**Long Jump:** At school we do standing long jump which is two feet to two feet for distance. At sports day we will practice with a run up to increase distance.

**Triple Jump:** This is a hop, step and jump. Three jumps that link together to make a bigger jump. Again, we do this with a run up into a sand pit on sports day.

**High Jump:** This is a test of vertical jump power. You have to try to jump up over a bar. The technique for this is the Fosbury flop. Named after the first man to go backwards over the bar.



School Awards to aim for: you will get a certificate for each one of these you can achieve!

EVENT	GIRLS			BOYS		
	BRONZE	SILVER	GOLD	BRONZE	SILVER	GOLD
100m (seconds)	18.50	16.50	14.70	17.50	15.00	13.40
200m (seconds)	40.00	36.00	31.00	38.3	32.60	28.80
800m (minutes)	4.20	3.40	3.00	3.45	3.10	2.40
1500m (minutes)	9.00	7.30	6.15	7.10	6.20	5.25
Long Jump (standing metres)	1.40	1.60	1.80	1.60	1.80	2.00
Triple Jump (standing metres)	5.50	6.00	6.60	5.80	6.50	7.00
Shot Put (metres)	4.30	5.70	6.80	4.80	6.50	8.60
Discus (metres)	9.00	13.00	17.00	12.00	17.00	22.00
Howler (metres)	15.00	30.00	40.00	30.00	40.00	50.00

## Key Word and Definitions:

## Athletics

Remember to use your 'memory method' techniques to remember 100% of your key terms.



Track events	These are the running events. They are called track events as they are typically performed on a 400m circular track.
Field Events	These are the jumping and throwing events. They have their own separate areas that are specialised to that event.
Speed	The time taken to cover a set distance. Or simply put, how fast can you go?
Power	Speed x strength. Power is specifically needed in the field events where you need to exert a large force quickly.
Coordination	Using two or more body parts together. This can also be used with equipment.
Aerobic Endurance	The cardio-respiratory system sending oxygen to the working muscles for a long period of time.
Pacing	Pacing is judging your speed to ensure you can continue at that speed for the whole race without "burning out". This is specifically important in long distance races.
Preparation Phase	This is how you prepare for the event, typically used in field events. How can you set your body to ensure the throw or jump is perfect?
Execution Phase	This is what you actually do at the time of the throw or jump, how should your body look during this time?
Follow Through	How does your body finish? This is really important at this will determine your overall distance and direction.

Are you **100%** ready to answer these questions based on your learning so far?



 **ACE Question**

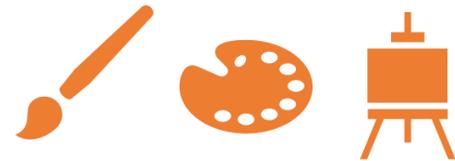
Accept	Challenge	Extend
<p>“The preparation phase is the most important phase of the shot put”</p> <p>How could you accept this statement?</p>	<p>“A long-distance runner is the fittest of all the athletes that compete in the Olympics.”</p> <p>How could you challenge this statement?</p>	<p>“Pacing is important so you can continue running at a sustained speed without burning out.”</p> <p>How could you extend this statement?</p>

<u>Cold Questions</u>
1. List the sprint track events.
2. What does anaerobic mean?
3. What are the three throwing events?
4. Who holds the world record for the 100m sprint?
5. What is the name for the high jump technique?
<u>Hot Questions</u>
1. Explain the difference between anaerobic and aerobic using athletics examples.
2. Describe what is meant by pacing and why it is important
3. Select three events from above and set yourself targets to achieve. Review these after you have done the events.
4. Explain how a good preparation phase can increase distance
5. <b>CHALLENGE ME Q:</b> Discuss the difference in body shape between a sprinter and a <u>long distance</u> runner.

**Unit Intent: In this half term you will develop your observational drawing skills further in relation to still life objects and images.**

**In this project you will...**

- Develop your knowledge of observational drawing, when working with still life objects.
- Develop your knowledge of tonal skills and mark-making.
- Develop your written annotation skills by adding comments to your work regarding your successes and areas for improvements.
- Develop your knowledge of how to accurately use different mediums.



**You will create...**

- 2 or more drawings of an object, this can be any object found around the house.
- Each drawing must be in a different medium, for example: colour pencil, shading pencil, biro, fine liner.
- Try to add as much detail to your drawings as possible.
- Make use of tone to make your shape look more 3D.
- When using pen or fine liner, try different mark-making techniques such as hatching and cross hatching.

**Examples**

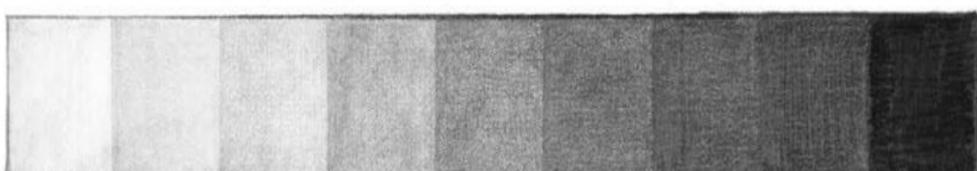


**Tonal Shading:**

Tonal shading refers to the lightness or darkness of an object. It is created by using different pressures with your pencils to gain light and dark areas on your object. Consider putting an arrow where the light would be coming from and this will help you to understand which areas should be darker and which should be lighter.

**Mark Making:**

When referred to in art Mark-Making is a term used to describe the lines, patterns and textures that are made from your medium. Individual mediums such as a pen can create multiple different kinds of marks such as circular motions or straight lines.



# Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

<b>Mediums:</b> The material or form used by an artist to create their work.	<b>Observational drawing:</b> Observational drawing is drawing what you can see in front of you as accurately and as true as possible.	<b>Still life:</b> A painting or drawing of an arrangement of objects, typically including fruit and flowers.	<b>Controlled:</b> Using your mediums in a controlled way is when you use them accurately and to the best of your ability.
<b>Presentation:</b> How a piece of work or pieces of work are shown or explained to the intended audience. The way in which the work is arranged.	<b>Annotation:</b> A line or paragraph explaining or commenting on a piece of work, technique or skill.	<b>Inspiration:</b> The process of being mentally stimulated to feel something or do something, specifically when it is something creative.	<b>Detail:</b> A small, elaborate part of a piece of artwork including painting, drawing or crafts.

## ACE Questions – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“it is important to gain inspiration from different sources.”</p>	<p>“Drawings can only be created using pencils.”</p>	<p>“Presentation is important when displaying artwork.”</p>
<p>Why would you accept this viewpoint? Explain your answer.</p>	<p>How would you challenge this viewpoint? Explain your answer.</p>	<p>How can you extend this view point? What other data can you access? Explain your answer.</p>

## Can you get 100% right?

### Cold Questions

1. What does annotation mean?
2. What does inspiration mean?
3. What does Still life mean?
4. What is a medium?
5. What is detail?
6. What is an observational drawing?
7. What does presentation mean?
8. Can you take inspiration from multiple artists work?

### Hot Questions

1. Why is it important to use control when working with different mediums?
2. Why is it important to add annotation to your work?
3. Why is it important to take inspiration from artists work?
4. How does effective presentation improve the overall look of your work?

### Challenge Me Question

Can you improve one of your observational drawings by adding more detail and tone?

### Creative Careers Corner

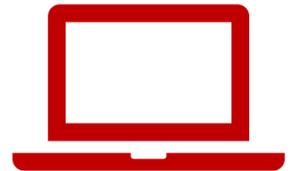
#### Art and Design



Artist / Architect / Book Illustrator / Curator / Cinematic Artist / Fashion Designer / Art Director / Brand Designer / Animator / Make up Artist / Art Therapist / Conservator / Set Designer / Costume Designer / Art Teacher

**Unit Intent:** In this half term you will analyse and evaluate apps available, then research and design your own unique app.

## About this Topic



### **In this project you will...**

- Research apps available and be able to describe their purpose.
- Develop your knowledge of why target audiences are important.
- Develop your written skills by adding comments on your work of what areas can be improved upon and how your work was successful (evaluate).



### **You will create...**

- Three designs of unique apps which you think is missing from the market and choose your favourite.
- Within these designs add your intended target audience and describe how it meets that audience.
- A description of how your app will work in detail and what it will do (annotate).
- Consider possibilities of how it can be improved in the future.

**App Examples**



### Research:

This is where you are getting your ideas from, evidencing your ideas. What apps are already available? Which ones do you like? What are their intended audience? If you were to design and make an app what would it be and how would it work? Who would it be aimed at?

### Create:

Design three different and unique apps. Add detail and describe how they will work? Choose your favourite. Many apps are recognised by its logo. How will your look. See examples above.

### Developments:

This is the point you analyse what you have done so far. What do you think is good about your design? What can you improve? How does it need the target audience? This is where you identify your strengths and develop these further into your work!

### Final Outcome:

This is the end point of your project, your final App design, your answer to what is missing from the market. This outcome should be your best design, showcasing your creative skills.

# Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

<b>Design:</b> plan or drawing produced to show the look and function or workings of apps.	<b>Research:</b> a detailed study of a subject, especially in order to discover (new) information or reach a (new) understand.	<b>Evaluate:</b> to judge the quality of your work,	<b>Target audience:</b> a particular group at which a product is aimed at.
<b>Presentation:</b> How a piece of work or pieces of work are shown or explained to the intended audience. The way in which the work is arranged.	<b>Annotation:</b> A line or paragraph explaining or commenting on a piece of work, technique or skill.	<b>Apps:</b> an application, especially as downloaded by a user to a mobile device.	<b>Detail:</b> A small, elaborate part of a piece of artwork including painting, drawing or crafts.

**ACE Questions** – are you 100% ready to answer these questions based on your learning so far?

<b>Accept</b>	<b>Challenge</b>	<b>Extend</b>
<p>“Researching other available apps helps you gain a more realistic outcomes.”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“You should only add annotation to your design when something goes wrong.”</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“Evaluating your work is important.”</p> <p>How can you extend this view point? What other data can you access? Explain your answer.</p>

## Can you get 100% right?

### Cold Questions

- 1) What does annotation mean?
- 2) What is an app?
- 3) What does target audience mean?
- 4) What is a Research page?
- 5) What is design?
- 6) What is a development?

### Hot Questions

- 1) Why is it important to look at different apps?
- 2) Why do you need to research?
- 3) How can you make sure your design is unique?
- 4) Why is the designing three different apps important to the process?
- 5) How can you make sure your app meets with your chosen audience?

### Challenge Me Question

Can you answer all the Cold and Hot questions with as much detail as possible?

### Creative Careers Corner

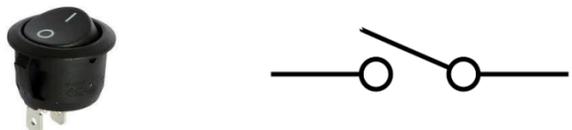
#### Computer Science



Computer Hardware Engineer/Computer Network Architect /Computer and Information Research Scientists /Database Administrator /IT Project Manager / Games Developer /Programmer / Software Developer /Web Designer / Computing Teacher / IT Consultant

**Unit Intent:** In this unit we will learn about electronic components and how to safely construct a circuit by soldering it together.

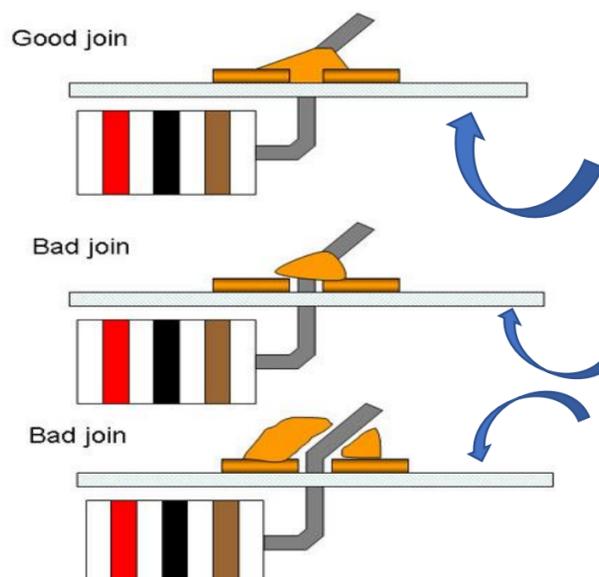
## Common Electronic Components

Component Name	Component view and Symbol	What the component does
<b>Resistor</b>		Reduces the flow of current to sensitive components and stops them being damaged
<b>Light Emitting Diode (LED)</b>		Used as an Output device to indicate that the power is switched on in a circuit
<b>Battery Snap</b>		Used to connect a battery to a circuit to provide electrical power
<b>Single Pole Single Throw Switch (SPST)</b>		Used to switch ON and OFF the power supply to a circuit
<b>Buzzer</b>		Used as an Output device to indicate something has happened in a circuit by making a sound

## Soldering Safety

Use the following rules for safe soldering:

1. Wear Eye Protection, either a face shield or safety glasses.
2. Replace the soldering iron back into the stand when not in use
3. When cutting off leads, make sure they are held so they can not flyaway.
4. Ventilation. Avoid breathing smoke/fumes generated by the flux during soldering.
5. Other Protective Clothing and Equipment: legs and arms should be covered to avoid burns from splashed hot solder.
6. Use pliers, vice or clamp to hold work in order to avoid burns from components that have been heated.
7. Never touch the tip of the soldering iron to see if its hot.



## Soldered Joints

A good soldered joint should be shiny to look at and form a pyramid shape around the leg of the component being attached to the circuit.

A bad soldered joint is when the solder does not fully attach to the component leg leaving a gap. This is known as a dry joint and does not allow electrical current to pass through the component so creating a fault in the circuit.

Faults can be very difficult to locate so it is important to follow the correct soldering procedure.

# Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

<b>Resistor:</b> A small electronic component which is used in a circuit to protect other components.	<b>Solder:</b> A soft metal which is used to attach components to a circuit.	<b>Flux:</b> A substance found inside solder which cleans the surfaces being joined together.	<b>Output Device:</b> A component which indicates something has happened in an electronic circuit.
<b>Light Emitting Diode: (LED)</b> A component used in a circuit to show the power is ON.	<b>Dry Joint:</b> A soldered joint which hasn't been correctly formed.	<b>Fumes:</b> A gas or smoke given off when solder is heated.	<b>Component:</b> A single part of an assembled circuit.

**ACE Questions** – are you 100% ready to answer these questions based on your learning so far?

## Accept

“A soldering iron must be hot for it to work correctly.”

Why would you accept this viewpoint? Explain your answer.

## Challenge

“Making a circuit with used components is good practice.”

How would you challenge this viewpoint? Explain your answer.

## Extend

“Most electronic components must be fitted the correct way round in a circuit so it works correctly.”

How can you extend this view point? What other information can you provide? Explain your answer.

## Can you get 100% right?

### Cold Questions

1. What is an LED?
2. What is an Output device?
3. What does Function mean?
4. What is Solder?
5. What are fumes?
6. What are components held in ready to solder?
7. Why do you never touch a soldering iron tip?

### Hot Questions

1. Why are resistors important in circuits?
2. Why is it important to keep electronic components clean?
3. What is the difference between a good and bad soldered joint?
4. Why is flux in solder?
5. Why does the tip on the soldering iron need to stay shiny?

### Challenge Me Question

Can you use the website [www.technologystudent.com](http://www.technologystudent.com) to find out more about soldering and why it is important to keep the soldering iron tip clean?

### Creative Careers Corner

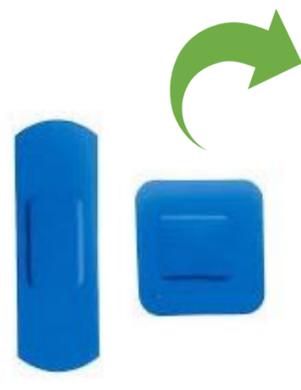
#### Design Technology

Architect / Brick Layer / Cabinet Maker / Carpenter / Electrician / CAD Designer / Lighting Technician / Locksmith / Engineer / Plasterer / Plumber / Set Designer / Window Fitter / Offshore Roustabout / Gardener / Mechanic / Construction / Model Maker



**Unit Intent: Understand how to use equipment safely in the kitchen and to keep themselves and others safe.**

- You will need to demonstrate effective and safe cooking skills by cooking a variety of food dishes.
- You will understand how to store and prepare food safely to avoid cross contamination.
- You will understand how to stay safe in the kitchen.



**Blue foods are rare, and blue plasters can be easily spotted if they fall in. This is the most important reason we use blue plasters in the kitchen**

**Safety Tips:**

- **Before cooking make sure that you are prepared and the area is clean and tidy**  
This sounds straight forward but many people don't have the correct preparation.
- **Always wash your hands and tie hair back**
  - **Put on an apron**
  - **Check surfaces are clean**
- **Collect all equipment making sure it is clean**
- **Keep your area clean throughout cooking**  
Keeping your area clean and tidy this will help you to be safe during cooking.

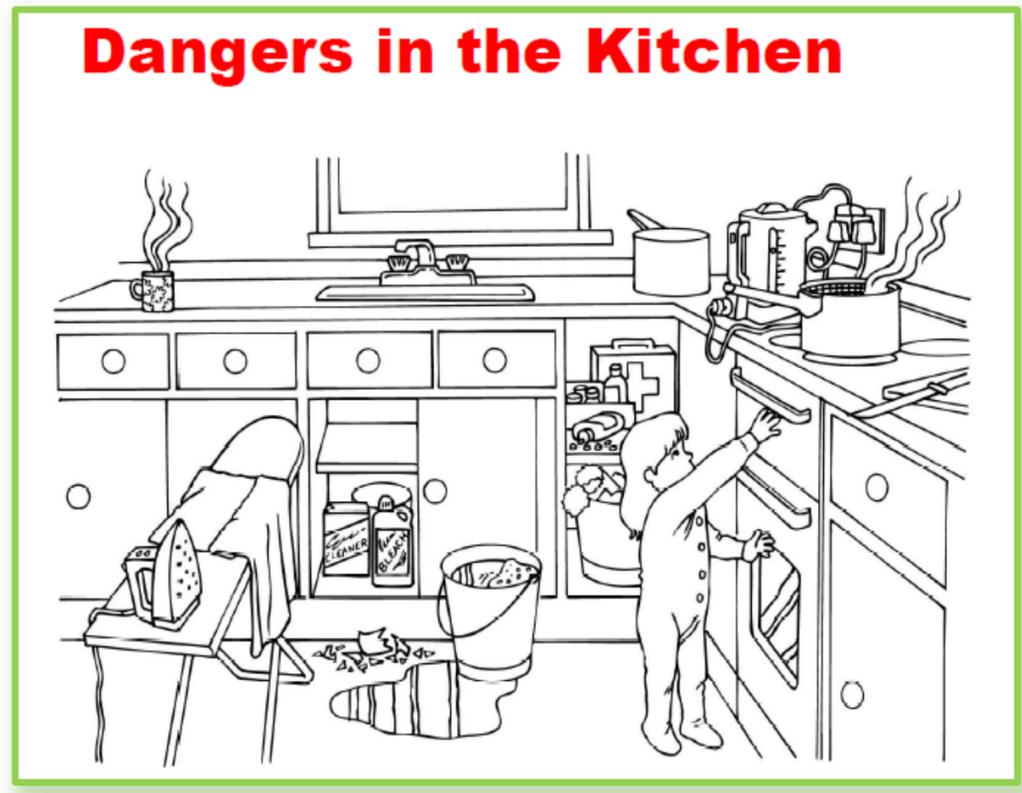


**Knife Safety**

When using a sharp knife always use the correct knife as this will enable you to cut/chop safely.

Always use the bridge or claw grip as this will ensure your fingers are safe.

When washing knives do it immediately, knives in the bottom of a washing up bowl can lead to someone cutting themselves. Knives should then be placed in a knife block or blade down in a drawer.



Hazard	Consequence	Remedy
Open cupboard door	Bangs on head or legs	Ensure doors are firmly closed
Spillages	Someone can slip and hurt themselves	Clean it up as soon as possible
Wires dangling	Can be caught and equipment pulled off	Always make sure wires are stored safely
Child too near the oven	Child could burn themselves or pull something over	Child needs to be moved away from oven, pan handles turned in.



# Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

<b>Hazard:</b> Something in the kitchen that is a danger and could cause injury	<b>Consequence:</b> The result of something happening due to a hazard.	<b>Remedy:</b> How you make something right - remove the hazard	<b>Contaminate:</b> Making a food unsafe to eat by allowing it to come into contact with microbes that will grow and multiply in it.
<b>Hygiene:</b> How you keep yourself and everything clean	<b>Bacteria:</b> Microscopic single-celled living organisms, some of which can cause food poisoning.	<b>Toxins:</b> Another name for poisons; if something is toxic, it is poisonous	<b>Cross-contamination:</b> How microbes spread from one place onto some food.

**ACE Questions** – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“Everything in the kitchen is based on safety.”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“It is okay to wear false nails in a professional kitchen</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“When working in a professional kitchen it is important to tie your hair back.”</p> <p>How can you extend this view point? What other information can you include? Explain your answer.</p>

## Can you get 100% right?

### Cold Questions

1. What is a hazard?
2. What is a remedy, give an example?
3. How do you prepare yourself for cooking?
4. How do you prepare your environment for cooking?
5. Why is it dangerous for young children to be in the kitchen?

### Hot Questions

1. Can you write some advice on how to use knives safely?
2. What is cross-contamination?
3. Why are safety posters used in the kitchen?
4. How could you get food poisoning?
5. What are some signs and symptoms of food poisoning?

### Challenge Me Question



Here are some examples of symbols that appear on equipment or cleaning products in the kitchen, Can you write a detailed explanation of what each symbol means? Extension: Can you give examples of what products you might find these on?

### Creative Careers Corner

#### Food Technology



Head Chef/ Sous chef/ Head Waiter/ Waiter/  
Kitchen porter/ General manager/ Concierge/  
Front of house manager /Front desk receptionist/  
Maintenance/Barista/ Housekeeping/  
Bar staff/Sommelier/Publican/ Wedding Planner