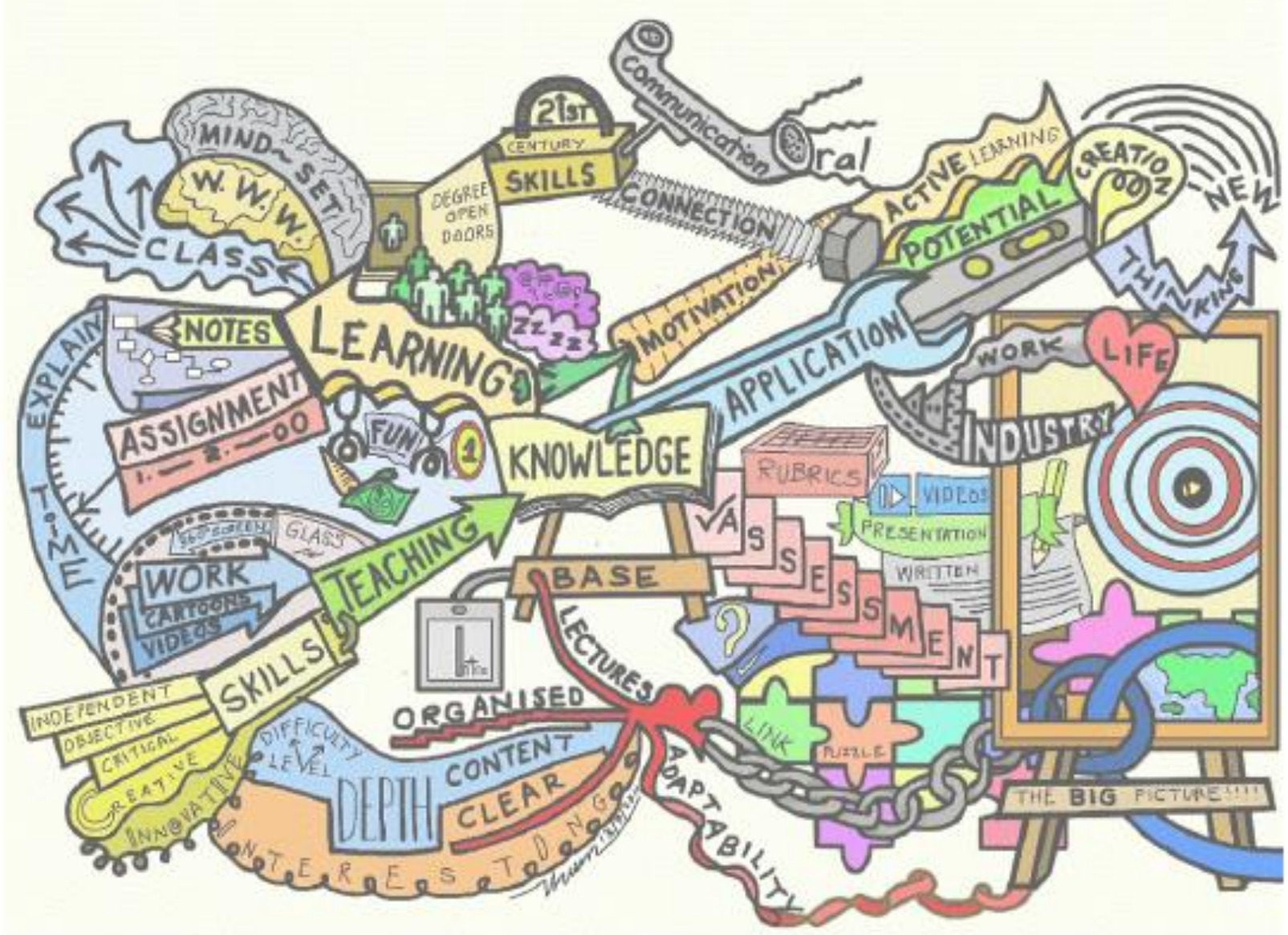
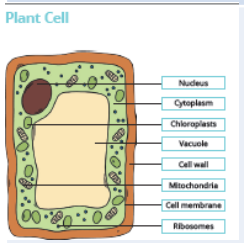
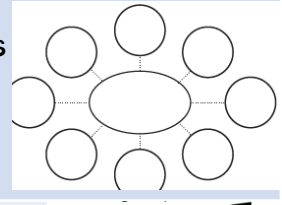
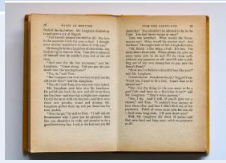

MIND-SET
W.W.W.
CLASS
21ST CENTURY SKILLS
DEGREE OPEN DOORS
Communication
oral
CONNECTION
ACTIVE LEARNING
POTENTIAL
CREATION
NEW
THINKING
MOTIVATION
EXPLAIN
NOTES
ASSIGNMENT
LEARNING
FUN
KNOWLEDGE
APPLICATION
WORK
LIFE
INDUSTRY
TIME
WORK
CARTOONS
VIDEOS
GLASS
TEACHING
BASE
RUBRICS
VIDEOS
PRESENTATION
WRITTEN
ASSESSMENT
SKILLS
INDEPENDENT
OBJECTIVE
CRITICAL
CREATIVE
INNOVATIVE
DIFFICULTY LEVEL
ORGANISED
LECTURES
DEPTH
CONTENT
CLEAR
INTERESTING
ADAPTABILITY
LINK
PUZZLE
THE BIG PICTURE!!!!

**Year 7 Name:**

Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.


| Subject | Page Number | Subject | Page Number |
|---|---|---|---|
| Multidisciplinary Lesson | 3 | Geography | 30 |
| Art | 4 | German | 33 |
| DT | 8 | History | 39 |
| Food | 9 | English | 41 |
| Textiles | 15 | Maths | 44 |
| PE | 18 | RE | 49 |
| Science | 22 | Music | 51 |
| Computer Science | 29 | A range of bonus ideas to prevent boredom | 54 |


| Idea | Explanation |
|---|---|
| Make some flash cards or PowerPoint slides. Make top trumps.  | Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself. |
|   Make a poster. | Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last! |
| Draw spider diagrams, or for the adventurous mind maps.  | Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall. |
| Write a song or a rap.  | Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising. |
|  Plan a lesson | If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term. |
| Write a story or comic strip.  | Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it. |
| Write a quiz.<br>Design a game.  | Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember. |

# Multi-disciplinary learning. Key Stage 3.

## What is a conspiracy theory?

Some people believe in things that other people do not. Here are a couple of examples for which there is little evidence.

Bigfoot lives in the Northwest Pacific area of North America

There is a Plesiosaur (The Loch Ness Monster) living Loch Ness in Scotland

However, some people then believe that other people are covering it all up. This can lead to some surprising places.

Activity 1: If there was Bigfoot or a Plesiosaur as shown above then how difficult would it be to keep it a secret? Look up how big Lock Ness is and how many people visit it every year.

Activity 2: Think about these questions / discuss them in a video chat with friends: What happens to you when you believe that the entire sections of society are keeping secrets? How could all scientists or the entire government keep a secret? How difficult would it be for 1000s of people to keep a secret? Why do film makers like conspiracy theories for their movies?

Activity 3: Listen to this radio programme. It is available on BBC Sounds. https://www.bbc.co.uk/sounds/play/m000dfqn

How many conspiracy theories are mentioned? Which ones have you heard about?

Activity 4: Mr Ford once, for a joke spread the rumour that the canteen at his college was serving Weetabix that were so cheap, the box they came in had more nutritional value as at least it contained roughage in the cardboard box. he got into a lot of trouble and had to write an apology to be displayed at the college canteen till. Write a letter for Mr Ford, to try to explain that he now understands how serious disinformation can be, highlighting what might have gone wrong.

Activity 5: Craft a conspiracy theory about Mr Ford. Email him with it. How would you get people to believe it? How far could you stretch it? How could you stop it once people started believing it – even if it was you who made it up?

For those of you with access to Disney watch Lion Guard "Beware of the Zimwi" episode. How can belief cause panic?

Activity 6: Find out how anti-vaccination conspiracy theory has killed people.

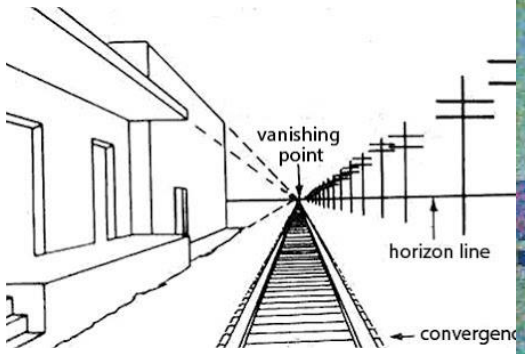
https://www.iflscience.com/health-and-medicine/one-map-sums-damage-caused-anti-vaccination-movement/

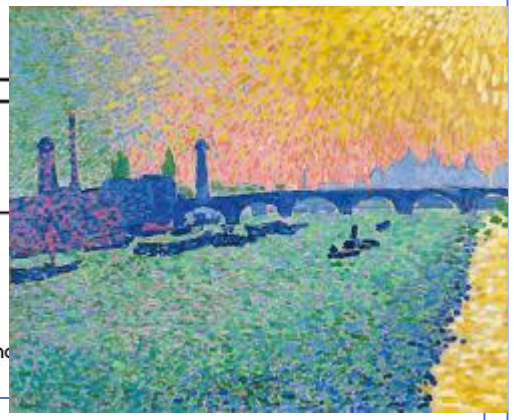
Activity 7: Challenge activity. Research one of the more popular myths and present a clear and referenced case to debunk it.

https://www.osce.org/odihr/441101?download=true

# Year 7- perspective landscape

**Overview:**
Students learn about one and two point-perspective and how it can create the illusion of distance in Art work.
You will draw a chequered table cloth surface using one point perspective and behind this will paint a Impressionist style landscape in the background using paint and oil pastel.



**Artists' studied:**
**Andre Derain-** He does bold colourful landscapes in the style of "Fauvism" which is a French word for wild beasts.

**Key words:**
**Linear Perspective:** A technique that uses a vanishing point to create the illusion of distance in pictures.
**Tone:** Using a pencil to clearly show the direction of light so items appear 3D.
**Blending:** Smoothing out pencil lines to create a gradual tone
**Colour Wheel:** Showing the relationship between colours
**Complimentary:** Colour opposite one another on the colour wheel
**Primary:** Red, Yellow, Blue – from which all other colours are made
**Secondary:** Green, Purple, Orange- Colours made from mixing two primary colours

**Materials / Techniques to be explored:**
Perspective drawing, mixed media painting, Dot painting,

1

## Methods of Recording

| | |
|---|---|
| Observational drawing | Drawing from looking at images or objects |
| First hand observation | Drawing directly from looking at objects in front of you |
| Second hand observation | Drawing from looking at images of objects |
| Photographs | Using a camera or smartphone to record images will class as first hand observation |
| Sketches | Basic sketches and doodles can act as a starting point for development |

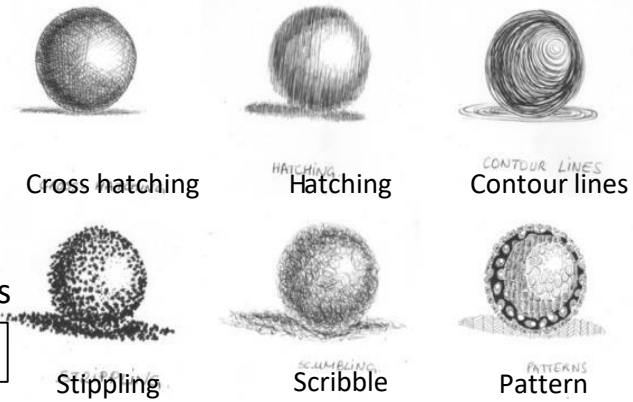
## Stages of Drawing

Basic shapes → Accurate shapes → Detail → Shade

2

**Tonal shade**
Produce a range of tones by varying the pressure and layering consider using softer pencils for darker shades

Alternative shade techniques




3

## Annotation

Describes writing notes, using images and explaining your thoughts to show the development of your work.

**Step 1 Describe**
What is this an image of?
What have you done here?
What was this stage of the project for?

**Step 2 Explain**
How was this work made?
How did you produce particular effects? How did you decide on the composition?

**Step 3 Reflect**
Why did you use these specific methods? Why do particular parts work better than others?
Why might you do things differently next time?

**Art Key Stage 3**

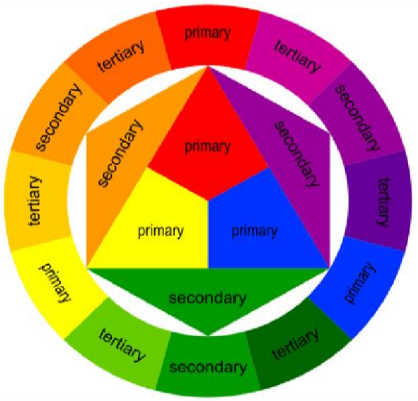
1- Formal elements are taught e.g. how to sketch and use tone to create a 3D effect. You will explore the colour wheel and how to use the basic materials in Art.
2-"The Greenman" – This project introduces you to facial proportions and how to blend oil pastels effectively. We also learn about clay and create small 3D Greenman faces. Examples of world renowned pieces of art are discussed.
3-"Perspective Landscapes"- This project introduces students to the concept of perspective and distance in Art. You learn about the technique of one-point perspective to create a feeling of depth in a landscape.

1

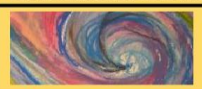
| | |
|---|---|
| **Media** | The substance that an artist use to make art |
| **Materials** | The same as media but can also refer to the basis of the art work eg, canvas, paper, clay |
| **Techniques** | The method used to complete the art work, can be generic such as painting or more focus such as blending |
| **Processes** | The method used to create artwork that usually follows a range of steps rather than just one skill |

3

| **Colour Theory** | |
|---|---|
| Primary= RED, YELLOW, BLUE | Complimentary; Colours opposite on the colour wheel |
| Secondary= Primary+Primary | Harmonious; Colours next to each other on the wheel |
| Tertiary= Secondary+Primary | Monochromatic; shades, tones & tints of one colour |
| Shades – add black | Hue – the pigment |
| Tint – add white | Warm; RED, ORANGE YELLOW. Cold; BLUE, GREEN, PURPLE |




2

| | | |
|---|---|---|
| **Pencil** |  | The basic tool for drawing, can be used for linear work or for shading |
| **Biro** |  | Drawings can be completed in biro and shaded using hatching or cross hatching |
| **Pastel (chalk/oil)** |  | Oil and chalk pastels can be used to blend colours smoothly, chalk pastels give a lighter effect |
| **Coloured pencil** |  | Coloured pencil can be layered to blend colours, some are water soluble |
| **Acrylic paint** |  | A thick heavy paint that can be used smoothly or to create texture |
| **Watercolour** |  | A solid or liquid paint that is to be used watered down and layered |
| **Gouache** |  | A pure pigment paint that can be used like watercolours or more thickly for an opaque effect |
| **Pressprint** |  | A polystyrene sheet that can be drawn into to print white lines – can be used as more than 1 layer |
| **Monoprint** |  | Where ink is transferred onto paper by drawing over a prepared surface |
| **Collograph** |  | A printing plate constructed of collaged materials |
| **Card construction** |  | Sculptures created by building up layers of card or fitting together |
| **Wire** |  | Thick or thin wire manipulated to create 2d or 3d forms |
| **Clay** |  | A soft substance used for sculpting, when fired can be glazed to create shiny colourful surfaces |
| **Batik** |  | A fabric technique using hot wax to resist coloured inks |
| **Silk painting** |  | Fabric inks painted onto silk, Gutta can be used as an outliner to prevent colours mixing |

Art Key Stage 3

1

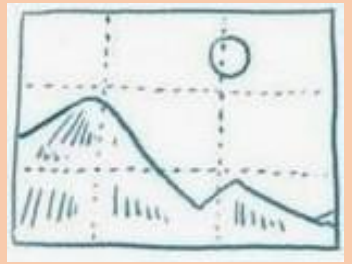
## Formal Elements of Art

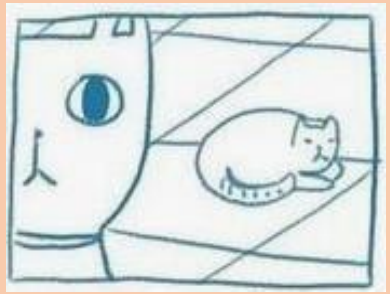
| | |
|---|---|
| LINE | the path left by a moving point, e.g. a pencil or a brush dipped in paint. It can take many forms. e.g. horizontal, diagonal or curved. |
| TONE | means the lightness or darkness of something. This could be a shade or how dark or light a colour appears |
| TEXTURE | the surface quality of something, the way something feels or looks like it feels. There are two types : Actual and Visual |
| SHAPE | an area enclosed by a line. It could be just an outline or it could be shaded in. |
| PATTERN | a design that is created by repeating lines, shapes, tones or colours. can be manmade, like a design on fabric, or natural, such as the markings on animal fur. |
| COLOUR | There are 2 types including Primary and Secondary . By mixing any two Primary together we get a Secondary |

2

## Composition Layouts

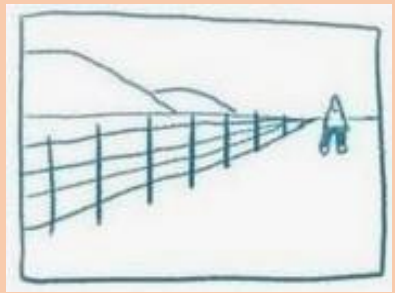
Rule of thirds – Place focal objects at 1/3 or 2/3 of the image horizontally or vertically. Not in the middle





Balance elements. If there is an emphasis on one side balance it out with smaller objects on the other

Simplify and fill. Enlarge or crop the image to fill the space



Use lines. Lines will draw the viewer in, they don't have to be straight, consider S or C

3

| A Rough | A Visual/ Maquette | Final Piece |
|---|---|---|
| A basic sketch of a final idea | A small image or model created in selected materials | An image or sculpture pulling all preparatory work together |

Art Key Stage 3

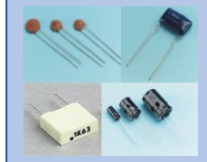
# Year 7 Electronics and Graphic design, making a speaker and packaging

Activity: Create a project showing the packaging of items in your house. Explain the graphic design and evaluate it in detail how could it be improved? Then design your own packaging for the items you studied. 1 item each few days would be a suitable workrate.

## Electronics

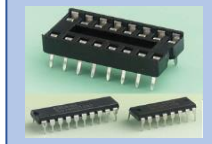
**Basic electronics comprises the minimal "electronics components" that make up a part of everyday electronics equipment. These electronic components include resistors, transistors, capacitors, diodes, inductors and transformers. Powered by a battery, they are designed to work under certain physics laws and principles**

### Basic components and their function



A capacitor is a component that can store electrical charge (electricity). In many ways it is like a rechargeable battery. A good way to imagine a capacitor is as a bucket, where the size of base of the bucket is equivalent to the capacitance (C) of the capacitor and the height of the bucket is equal to its voltage rating (V). The amount the bucket can hold is equal to the size of its base multiplied by its height, as shown by the shaded area.

A resistor is a device that opposes (or limits) the flow of electrical current in a circuit. The bigger the value of a resistor the more it opposes (or resists) the current flow.

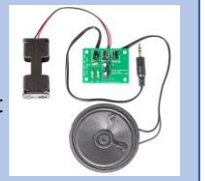


Integrated Circuit The top picture is an IC holder placed into the PCB, below are ICs. The notch on the holder should line up with the notch on the PCB

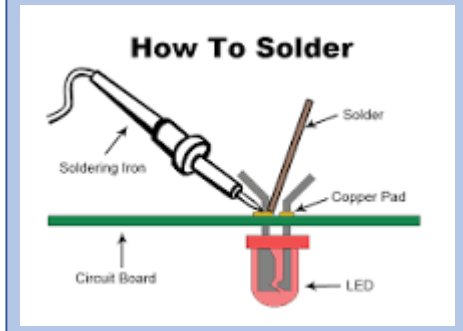
Printed circuit board (PCB). Components are soldered onto this and joined by a copper strip

Batteries provide power to the circuit

Finished soldered circuit



### Soldering




Soldering is a process in which two or more metal items are joined together by melting and then flowing a filler metal into the joint—the filler metal having a relatively low melting point. Soldering is used to form a permanent connection between electronic components

**Tools to solder successfully**

Soldering iron: Heats solder to attach components to PCB

Wire strippers: Strips the plastic coating from electrical wire to make soldering easier

Solder: lead substitute, when melted acts like glue to join components to the PCB

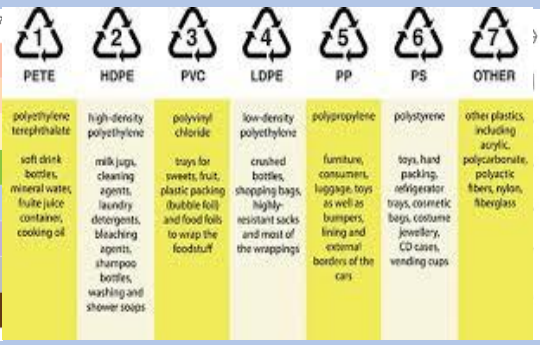
## Graphic design

**Could you imagine a world without pictures to help you visualise products you are purchasing? A good company utilises pictures and text to help capture the attention of its audience. Graphic design is a combination of visual images and text to communicate to an audience.**

**Design and make new packaging for a specified target audience.**

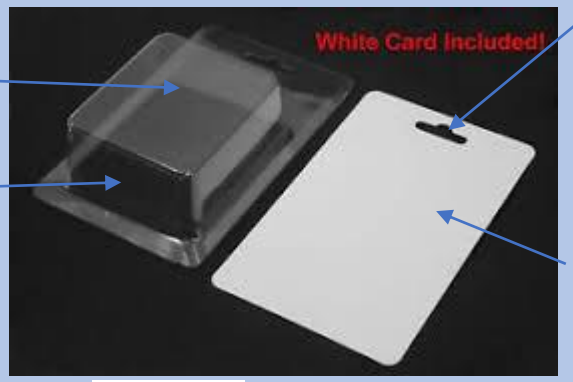
**Colour theory**


**Plastic classification**




**Graphical Symbols**


### Blister style packaging




**Vacuum formed plastic**
A vacuum is applied sucking the sheet into the mould. The sheet is then ejected from the mould.

**HIPS plastic**
High Impact Polystyrene, it is a tough, rigid plastic material with high impact strength which can be guillotined, punched, routered or sawn easily, and is readily available in a wide variety of colours

**Euroslot**
A Euro slot is a flap for a product so it can be hung up

**Cardboard**
Cardboard is thick , stiff paper that is used, for example , to make boxes and models. It is made from paper pulp.

CE stands for Conformité Européenne, which is French for "Conformity." A product in one of the controlled product categories cannot legally be sold in the EU unless it has passed the tests to receive the CE marking.

### CAD

2D Design and Solid Edge (3D) are used in the Academy. CAD (computer-aided design) software is used by architects, engineers, drafters, artists, and others to create precision drawings or technical illustrations. CAD software can be used to create two-dimensional (2-D) drawings or three-dimensional (3-D) models.

# Health and Safety

## Micro-organisms

Micro-organisms are tiny forms of life. They can only be seen under a microscope and are sometimes called microbes.
They spoil food and make it unsafe to eat because they contaminate it with their waste products, their physical presence and the toxins they produce.

### What micro-organisms can spoil food and make it unsafe to eat?

There are three groups of micro-organisms that you need to know about that spoil food and cause food poisoning. These are..

- Bacteria
- Moulds
- Yeasts

### Micro organisms need 5 conditions to grow and multiply:

1. A warm temperature
2. Plenty of moisture (water)
3. Plenty of food
4. The right PH level (not too acidic or alkaline
5. Enough time (bacteria split every 10-20 minutes)

## High risk foods

- High risk food have ideal conditions for bacteria
- High risk foods are ready to eat foods that could grow harmful bacteria
- They are moist and high in protein which is food for bacteria.
- High risk foods have a short shelf life – you can't keep them for long or the bacteria might multiply to dangerous levels.

### Examples of high risk foods:

Cooked meat, fish and poultry, dairy products (eggs, cheese etc.), gravies, stocks and sauces, shellfish, cooked rice.

### Example exam questions:

What five conditions to bacteria need to grow and multiply? (5 marks)
What is a high risk food? (5 marks)

## Storing food safely

| Cooking (75°C) | The danger zone (5°C-63°C) |
|---|---|
| • Cooking food above 75°C kills bacteria<br>• Re-heat food properly, only once. Reheat food so 75°C for at least 3 minutes<br>• Check the food is 75°C with a temperature probe | • Bacteria can grow and multiply quickly between 5°C to 63°C.<br>• This is called the danger zone<br>• The optimum temperature for bacterial growth is 37°C |
| **Chilling (0°C – 5°C)** | **Freezing (-18°C)** |
| • Keeping food between 0°C and 5°C slows down the growth of bacteria<br>• This extends the shelf life of food<br>• Chilling food doesn't change the properties much – food looks and tastes the same | • Freezing food below -18°C stops bacteria growing – they become dormant<br>• Freezing generally extends shelf life and the nutrients aren't lost<br>• It doesn't kill the bacteria though. They become active again once the food defrosts. |

### Preparing self for cooking

- Tie hair back to prevent hair and dandruff falling in food
- Take off coats and blazers
- Wear an apron to prevent bacteria transferring from our clothes to our food
- Wash hands with hot soapy water to kill bacteria

### Preparing the room for cooking

- Sanitise all work surfaces
- Check equipment is clean and dry
- Tuck all stools in as they can be a trip hazard
- Put all high risk foods in the fridge to slow bacteria growth

### Wash your hands after:

- Coughing
- Sneezing
- Tying shoe laces
- Going to the toilet
- Touching hair or face

# Nutrition

## Nutrients

Macro nutrients – Needed in large quantities in the diet
1. Protein
2. Fats
3. Carbohydrates

Micro nutrients – needed in small quantities in the diet
1. Vitamins
2. Minerals

## Dietary related health problems

Too much sugar can cause:
1. Weight gain (which can lead to obesity)
2. Tooth decay
3. Diabetes (your body cannot produce enough/any insulin to regulate your blood sugar levels)

Too much salt can cause:
1. High blood pressure (this can increase your risk of heart disease and a stroke).

Too much saturated fat can cause:
1. Weight gain (which can lead to obesity)
2. High cholesterol (this narrows arteries making it harder for the blood to travel around, putting you at risk of heart disease).

**Example exam questions:**

Explain three causes of obesity (3 marks)
What is the function of sugary and starchy carbohydrates (2 marks)
Why is protein especially important for children? (2 marks)
What are the functions of fat? (3 marks)
List 5 food sources of plant based protein (5 marks)

## Protein

### Food sources

Animal –beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk
Plant – beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

### Function

Grown and repair of muscles and cells

## Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

### Food sources

Starchy – bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.
Simple – fruit, some vegetables, chocolate, sweets, biscuits, cakes

### Function

Starchy/complex carbohydrates are digested slowly and provide long term energy.
Sugary/simple carbohydrates are digested slowly and provide short term energy

## Fat

There are two types of fat, saturated and non saturated.
Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.
Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant based sources.

### Food sources

Animal –beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk
Plant – vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds

### Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

# The Eatwell guide


## The Eatwell guide

The Eatwell guide is a government guide designed to show you the proportions of different foods groups you should eat over a day or more.

Tips on making healthy choices from the eatwell guide:

Fruit and vegetables: eat 5 portions of fruit and vegetables a day, this should make up 1/3 of your plate a day, fresh, canned dried and fruit juice/smoothies all count, don't exceed 150ml of fruit juice/smoothie a day as it can cause tooth decay, try snacking on fruit over high sugar and fat foods,

Potatoes, bread, rice, pasta and other starchy carbohydrates: choose non-sugary cereals, leave the skin on potatoes, choose wholemeal options of foods such as bread, rice and pasta.

Oils and spreads: choose unsaturated fats such as vegetable oils and margarine over butter, use in small amounts.

Dairy and alternatives: choose lower fat options such as skimmed milk and low fat and salt cheese, choose low sugar yogurts and add fruit as a natural sweetener.

Beans, pulses, fish, eggs, meat and other proteins: eat more beans and pulses as they are high in fibre and fill you up for longer, cut the visible fat off meat, choose lower fat meat options, eat 2 portions of fish a week.

Water: drink 2-3 litres of water a day, choose lower sugar option drinks.

**Example exam questions:**

How can I make healthy choices when choosing foods from the 'beans, pulses, fish, eggs meat and other proteins' section of the guide? (3 marks)

How much of my plate should be made up of fruit and vegetables per day? (1 mark)

How many grams of saturated fat is it recommended not to exceed per day? (1 mark)

Why is recommended not to exceed 6g of salt per day? (2 marks)

How can someone use the traffic light system to help them make healthy choices? (6 marks)

**Health and Safety Example exam questions:**

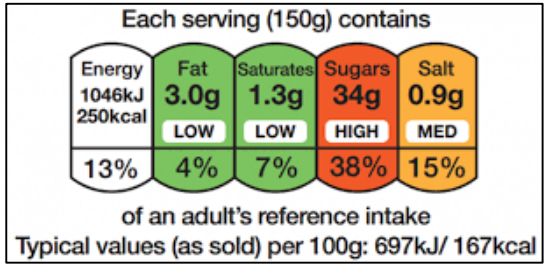
What five conditions to bacteria need to grow and multiply? (5 marks)

What is a high risk food? (5 marks)

# Reference intake

You'll see reference intakes referred to on food labels. They show you the maximum amount of calories and nutrients you should eat in a day. Most packaging has a colour coded label on the front to help you make healthy choices.

Reference in take amounts:
Kcal (calories) – 2000
Total Fat -70g
Saturated fat – 20g
Sugar – 90g
Salt – less that 6g




Red means HIGH in that nutrient
Amber means MEDIUM in that nutrient
Green means LOW in that nutrient

Reference intakes are not meant to be targets. They just give you a rough idea of how much energy you should be eating each day, and how much fat, sugar, salt and so on.

The percentages represent how much of your reference intake is in the product, e.g. the product has 3.0g of FAT in it, that is 4% of 70g of fat.

Activity:
Try these recipes if you have the right ingredients.

# Red pepper and Tomato pasta sauce

## Ingredients
1 small onion
1 clove garlic
1 red/yellow pepper
1 can chopped tomatoes
Splash of oil
Fresh basil/dried herbs
Salt and pepper
Optional: ½ chilli

## Equipment
Chopping board
Knife
Saucepan
wooden spoon
can opener

## Skills
Slicing
Dicing
Using the hob
Seasoning

1. Chop the onion and pepper into cubes. Mince the garlic.

2. Fry the onions and garlic in the oil for a few minutes until softened.

3. Add the pepper and continue to cook for a few minutes.

4. Add the can of tomatoes gently as they may spit.

5. Add black pepper, salt and mixed herbs and simmer gently for 10 minutes.

**How many things can you make with your sauce?**
Here are some ideas:
- Pasta topped with grated cheese
- Fry mince for a bolognaise
- Meatballs and pasta
- Add sausages, serve with mash
- Use as part of a lasagne

# Marble Cake

**Ingredients**

100g caster sugar
100g soft margarine
2 eggs
100g self raising flour
1 x 15ml spoon coco powder

**Equipment**

Mixing bowl
Measuring bowl
Measuring scales
Wooden spoon
Jug
Fork

**Skills**

Creaming
Weighing
Baking

1. Cream the butter and sugar together until light and fluffy.

2. Crack the eggs in a jug and beat with a fork.

3. Add the egg to the mixture a little bit at a time until all the egg is mixed in.

4. Fold in the flour.

5. Place half the mixture into the tin, leaving space for the chocolate mixture.

Mix chocolate powder into the remaining cake mixture. Fill the gaps in the cake tin with the chocolate mix and swirl lightly together.

Ingredients

250g-500g of minced beef OR Quorn mince

1 onion

1 pepper

1 carrot

2 cloves of garlic

Can chopped tomatoes

Can of kidney beans

1 stock cube

2tbsp tomato puree

1 tsp of hot chilli powder OR 2tsp of mild chilli powder

1tsp paprika

1tsp ground cumin

1tsp mixed herbs

pepper

Equipment

frying pan

Spatula

White chopping board

Knife

Teaspoon

tablespoon

Skills

Chopping

Frying

seasoning

# Chilli Con Carne

## Method

1. Prepare all vegetables, dice the onion and pepper, grate the carrot and mince the garlic.

2. Meanwhile heat a small amount of oil in your frying pan, and start frying the onions. Once they have softened add your garlic, peppers, grated carrot and seasoning.

3. Leave to cook for about 5 minutes then add your mince and cook until all the mince is browned ( NO PINK )

4. Once the mince has browned, add your tin of tomatoes, 200ml of water (use your empty tin, half full ) your (drained) tin of kidney beans, stock cube, 2 tablespoons of tomato puree.

5. Stir well, turn down the heat and leave to simmer for 15 - 20 minutes DON'T FORGET TO STIR OCCCASIONALLY, so that it doesn't stick or burn.

# Textiles – Equipment and Fabric

Activity: Learn how to iron, darn socks. If you have some spare fabric make sock puppets for a puppet theatre. In drama create a script. Make a video you record on your phone to share with friends and family.

**What is Textiles and what is a Textile Designer?**

- A textile is a type of woven cloth.
- A textile designer comes up with innovative ideas, **designs** and prints for a variety of fabrics, clothing and non-clothing materials, furnishing materials, industrial fabrics and other related materials, using both natural and manmade fibres.

## Tools and equipment

**Embroidery Scissors**
Used to cut off loose threads when sewing

**Embroidery thread**
Thick, colourful thread using for decoration in hand embroidery

**Embroidery needle**
Needle with a large eye so the thread ca fit through. Used to sew decoration onto fabric.

**Embroidery hoop**
Used to keep fabric taught (tight) so that it doesn't crease or bunch when sewing

**Un-picker**
Used to cut through stitches and thread. Usually used to amend mistakes.

**Sewing machine**
Used to join fabric together, construct garments and textiles and also for decoration.

**Example exam questions:**

Give an example of a synthetic material. (1 mark)
Explain the term 'textile design'. (2 marks)
What is an un-picker used for?. (1 mark)
Name one different between a sewing needle and an embroidery needle. (1 mark)

## Fabrics


### Natural Fabrics

**Cotton** – produced from a cotton ball. Cotton is a soft breathable fabric used to make many fabrics for many uses. Can hold strong, bright colours when dyed.

**Linen** – produced from the flax plant. Linen is a strong, absorbent fabric and dries quickly.

**Wool** – produced commonly from sheep but also other animals such as goats and rabbits. Wool is insulating and water resistant.

**Silk** – the silk work produces a silk cocoon which is processed into silk. Silk is light and comfortable, has good insulating properties (warm in winter, cool in summer) and is strong.

### Synthetic fabrics

**Polyester** – manmade from coal, water and petroleum. Polyester resilient fabric and can with stand a lot of wear an tear, holds dye well.

**Nylon** – manmade from petroleum, gas, coal and other materials. Nylon is a silky, strong and elasticated fabric.

**Regenerated Fibre** - Viscose is known as a regenerated fibre as it is made from cellulose found in wood pulp. It is often regarded as only partially man-made. It's a light, airy, breathable and biodegradable.

**Bonded fabrics** - Blended fabrics are created when two or more different kinds of fibres are mixed together to create a new fabric with unique properties e.g. polycotton.

# Textiles – Decorative techniques

## Applique

Applique is attaching shapes and patterns of fabric onto a larger piece of fabric to form a picture or pattern. Is it commonly used as decoration. The fabric can be attached by bondaweb or sewed using a machine or by hand.

## Materials Required

Bondaweb, a variety of fabrics, tracing paper (if required and an iron.

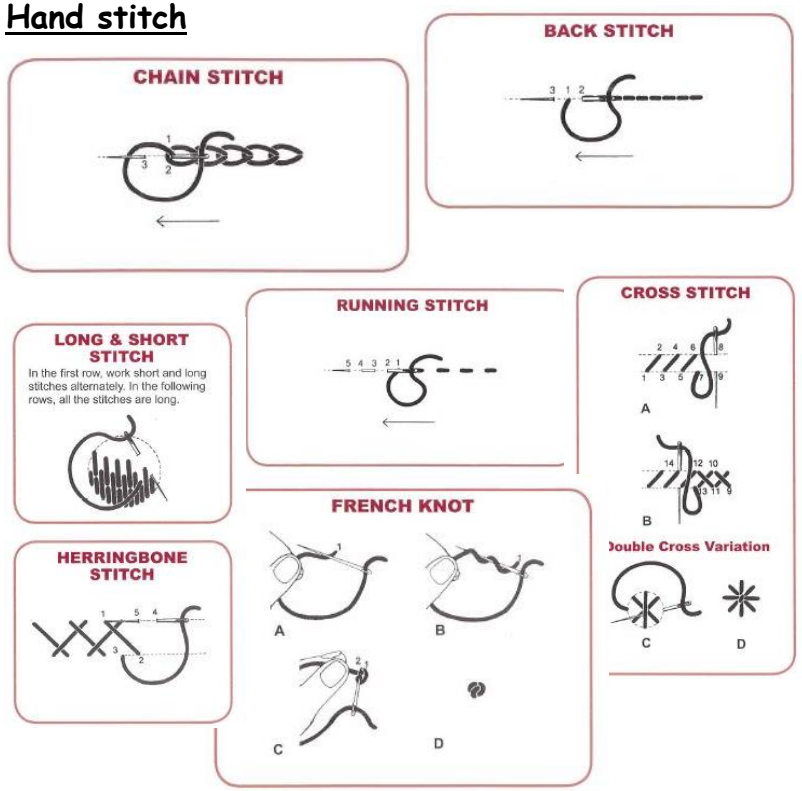
## How to do Applique

- Draw a simple design
- Trace the design onto the Bondaweb - on the smooth side
- When using letters or words, you must do a mirror image using tracing paper
- Label each colour that you want to use on your design
- Select each colour fabric from the scrap fabric draws
- Cut roughly each section of the Bondaweb – this will be ironed onto each colour
- Iron onto the coloured fabric that you have selected – place the Bondaweb and the fabric in between two pieces of paper in case the design signs to the iron or the ironing board
- Cut out each shape
- Collect a larger swatch to put your applique onto
- Return to the iron, with your swatch and sections of your design
- Peel back the paper from your cut out design and lay onto the larger swatch
- Make sure that the applique is the correct way – place the design between two pieces of paper in case the design sticks to the iron or the ironing board
- Iron onto the larger swatch

## Example exam questions:

Explain how to complete an applique sample when using Bondaweb (8 marks)
List 3 piece of equipment needed when completing hand embroidery. (3 marks)
Name one disadvantage of hand embroidery. (1 mark)
Explain what the term 'applique' means. (2 marks)

## Hand stitch




## Materials required

Embroidery needle, thread, fabric, embroidery hoop.

## Advantages of hand embroidery:

- Control over length of stitches
- Range of stitches to choose from

## Disadvantages of hand embroidery:

- Time consuming
- Must be tied off correctly or will unravel
- Thread can get caught and tangled.

# Patterns and the sewing machine

## Patterns

Patterns are used as a template when making textiles and fashion garments. They instruct you where to cut, sew, add zips and any other details you may need to know.

## Pattern symbols

Notch – Pattern notches are small marks made on the pattern to ensure that one pattern piece will match up to the pattern next to it.

Grain line – this is the direction on the fabric that the pattern should be cut. Some things are cut on the grain line, other are cut on the bias which is diagonal to the grain line.

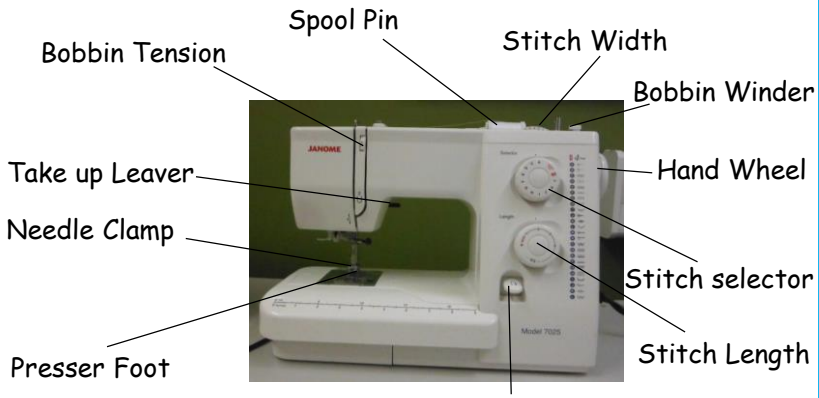
Seam Allowance – This is the space between the edge of the fabric and the sew line. Cut along this line when cutting out fabric from a pattern, this allows room for sewing it together. The seam allowance is usually 1cm.

Sewing line – Sew along this line when constructing your textile/garment.

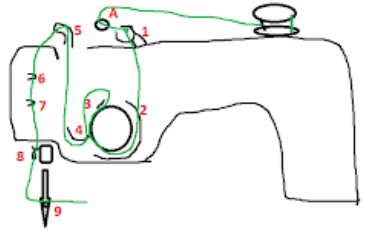
## Example exam questions:

Why are notches used on pattern pieces. (2 marks)
Explain the advantages of using a sewing machine to construct textiles over hand sewing. (3 marks)
Why would the reverse stitch button be used when constructing a textile? (2 marks)
What is a bobbin used for? (2 marks)
Why is a seam allowance important? (3 marks)
What does this symbol mean on a pattern? (2 marks)
Name two disadvantages of using a sewing machine for embroidery. (2 marks)

## Sewing Machine




## How to thread a sewing machine



## Materials required

Sewing machine, fabric, thread, scissors

## Advantages of sewing machines

- Quick embroidery
- Secure stitching and construction
- Quick to use a range of stitches are available

## Disadvantages sewing machines:

- Must understand how to use a sewing machine
- Can take some time to unpick incorrect stitches
- Less control over stitch lengths
- Cannot use wide a variety of different threads

## Why should we exercise?



Sport England posted an infographic on Twitter to give reasons why walking for 30 minutes each day was important. Scan this QR code to see the benefits.

## Warming up and cooling down

Components of a warm up:

- Pulse raiser
- Stretches
- Skill related

Warming up

Cooling

**5 reasons why we must warm-up**

1.) Increases the temperature of the muscles, tendons and ligaments, which reduces the chances of injury.
2.) Increases heart rate and body temperature safely, which reduces chances of injury.
3.) Increases flexibility, which aids flexibility.
4.) Mentally prepares you for exercise, which can help improve performance.
5.) Increases oxygen delivery to the working muscles, which supports performance

**6 reasons why we must cool down**

1.) Gradually returns body temperature, breathing and heart back to their resting rate.
2.) To mentally unwind.
3.) To remove lactic acid, helping to prevent DOMS (Delayed Onset Muscle Soreness)
4.) To remove carbon dioxide and waste products.
5.) Improves flexibility
6.) Avoids blood from gathering in muscles (pooling), which can cause dizziness

*DID YOU KNOW ...?*

The recommended safe heart rate for an individual during exercise is called your **Maximum Heart Rate** (HR max). To estimate your HR max you need the following formula: **MAXIMUM HEART RATE = 220 – Your AGE**. For example, if you are 20 Years old your HR max would be 220 – 20 = 200 beats per minute (bpm)

## Components of Physical Fitness

Watch this!

### Aerobic Endurance

The ability of the heart and lungs to work hard to supply nutrients and oxygen to the muscles during exercise.

### Muscular Endurance

The ability of the muscles to work efficiently for long periods of time

### Speed

The ability to cover a distance quickly. There are 3 types of speed (Accelerative speed, Pure speed and Speed Endurance.

### Muscular Strength

The maximum force, measured in kilograms (Kg) or newtons (N) that can be generated by a muscle or group of muscles.

### Flexibility

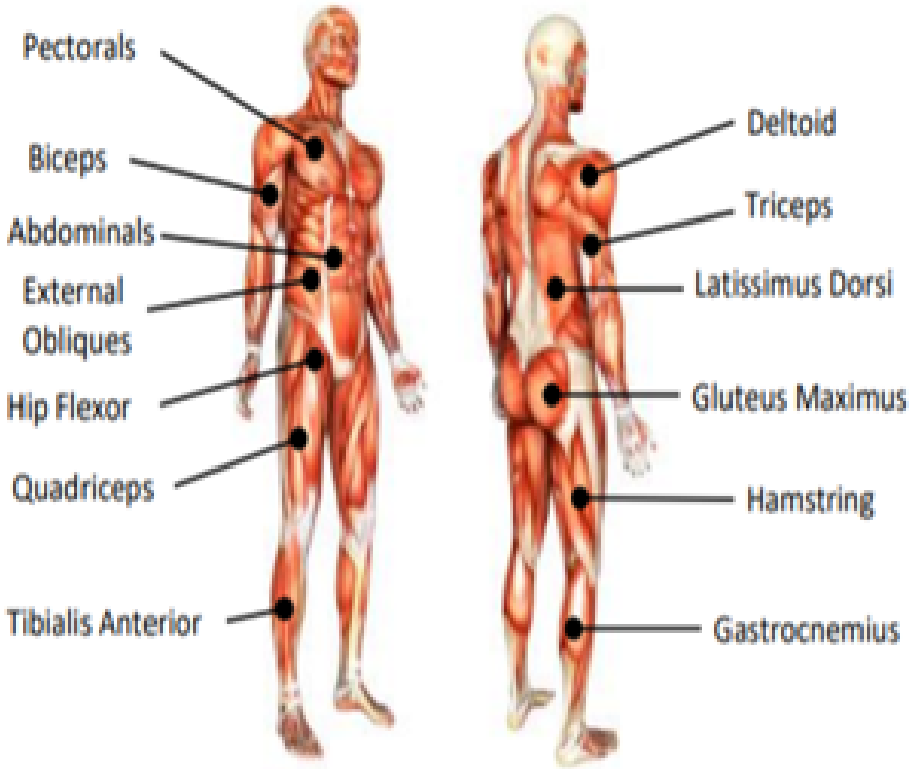
The range of motion in all joints of the body and the ability to move a joint fluidly through its complete range of movement.

### Body Composition

The amount of fat to fat-free muscle mass.

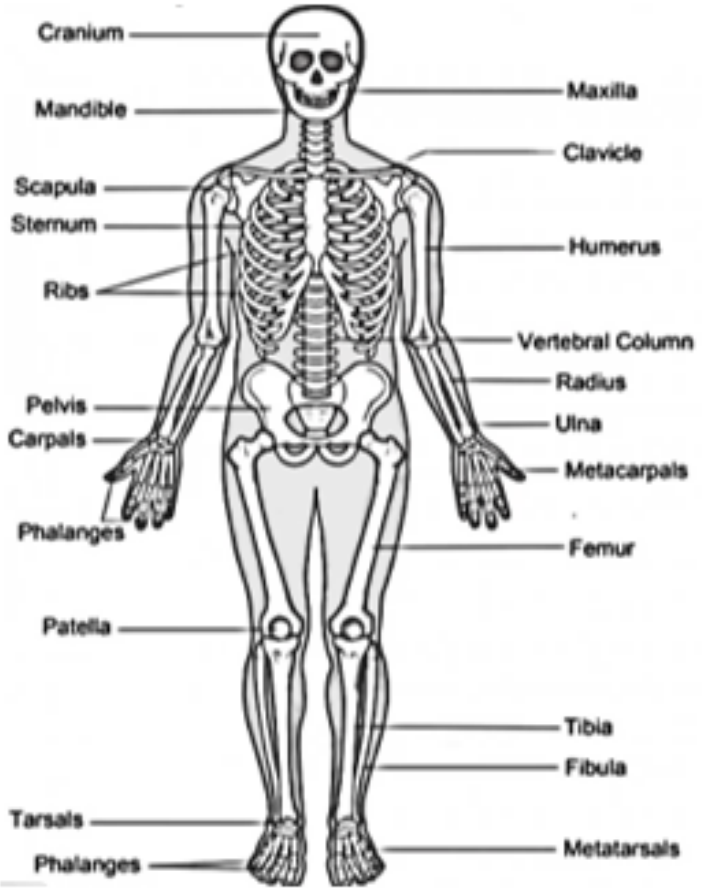
Can you now link each of the physical components to a sporting example? E.g. what sport would you usually see flexibility being used?

## Structure of the Muscular system




Watch this 5 minute video on the muscular system

## Structure of the Skeletal system




Using this QR code, learn and remember the 5 key functions of the skeletal system.

## Components of Skill-related Fitness

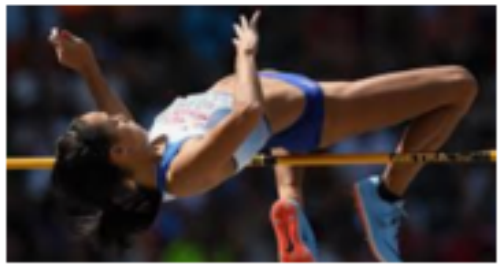
**Agility** – The ability of a sports performer to quickly change direction without losing balance or time

**Balance** – The ability to maintain your centre of mass over a base of support. There are two forms of balance (static which is maintaining balance in a stationary position and Dynamic which is maintaining balance while in motion)

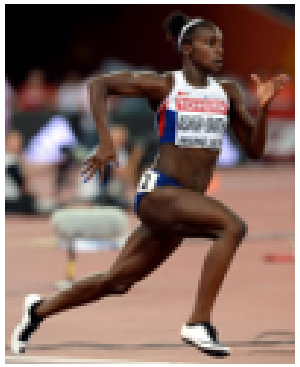
**Co-ordination** – The ability of the body to work together to move smoothly and accurately

**Power** – The ability to use strength and speed. It is the work done in a unit of time and is calculated in the following way Power-= Force (Kg) x Distance (m) / time (mins or seconds)

**Reaction time** – The time taken for a sports performer to respond to a stimulus, for example, the time taken for a sprinter to react to the starter gun.



It is important to understand that different sports and sports performers require different aspects of fitness. Many sports need the same types of physical and skill related fitness, however some are unique and require specific components.



Dina Asher-Smith is a British and World Champion sprinter. She needs to have **speed, power and reaction time** to cover as much distance as possible, respond to the starter's pistol and move powerfully out of the blocks to get a good start. It is also important for sprinters to have excellent **muscular strength and muscular endurance**

Harry Kane will require similar components of fitness in order to be successful. **Speed and agility** will be essential to move quickly into position avoid defenders when he has possession of the ball. He will also need a very high-level of **aerobic endurance and muscular endurance.**

Can you think of other sports performers who would require different components of fitness?

**Key words and terminologies**

| Aerobic Endurance | Muscular Endurance | Muscular Strength |
|---|---|---|
| Speed | Flexibility | Body Composition |
| Pulse Raiser | Stretches | Skill related |
| Gastrocnemius | Hamstring | Gluteus Maximus |
| Quadriceps | Triceps | Pectorals |
| Pectorals | Oblique | Fibula |
| Biceps | Tibia | Humerus |
| Femur | Radius | Ulna |
| Scapula | Clavicle | Vertebral Column |
| Cranium | Ribs | Sternum |
| Agility | Power | Balance |
| Co-ordination | Reaction Time | Max. Heart Rate |

# FORCES

A force can be a **push or a pull**, for example when you open a door you can either push it or pull it. You can not see forces, you can only see what they do.

When a force is applied to an object it can lead to a change in the objects
**Speed**

**Direction of movement**

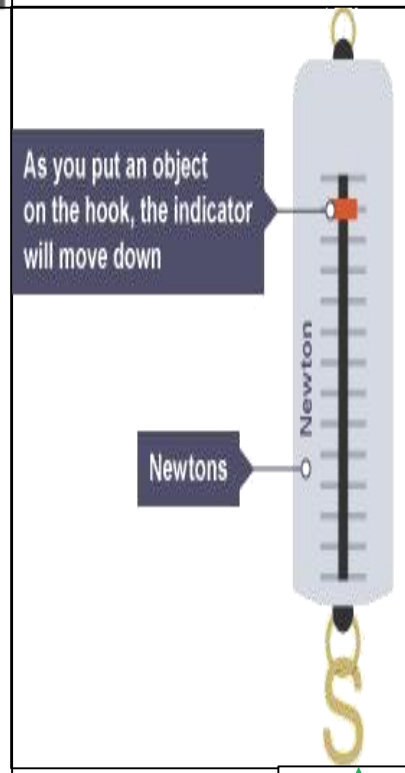
**Shape (think about a rubber band)**

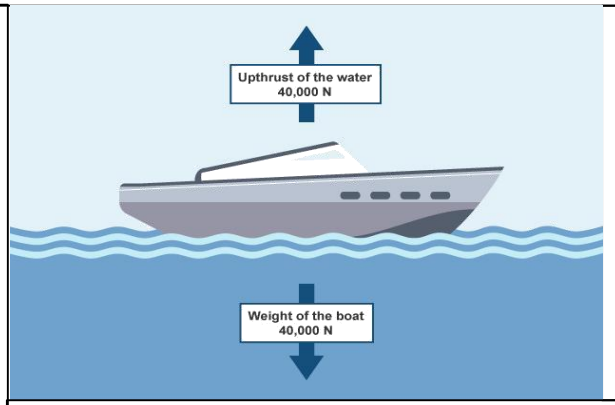
Forces can also be divided into 2 types, contact forces and non contact forces.

**Contact forces** for example friction, are caused when two objects are in contact.

Other forces for example gravity, are **non contact forces.** The two objects do not need to be in contact for the force to occur.

The unit of force is the **Newton (N)**, this is named after Sir Isaac Newton, who came up with many theories including those to do with gravity and the three laws of motion. We measure force using a piece of equipment called a Newton metre.




**Force Diagrams**

To show the forces acting on a body we use a free body force diagram. **A free body force diagram** shows all of the forces that are acting on the body. It has arrows that show the direction the force acts, the larger the arrow, the larger the force. A free body fore diagram should always have labelled arrows.

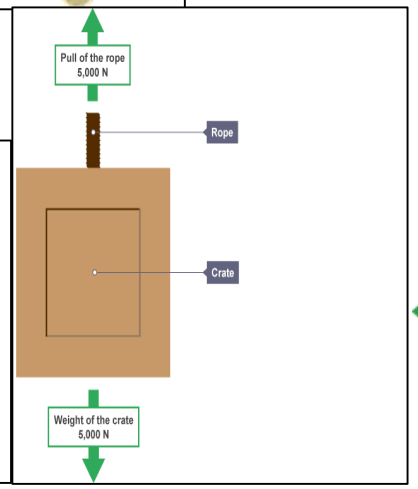
**Unbalanced forces**

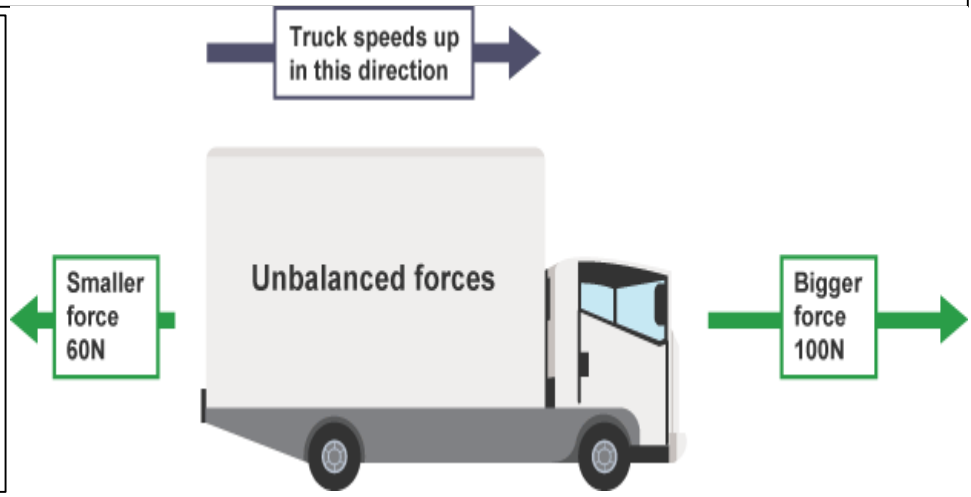
When two forces acting on an object are not equal in size, we say that they are unbalanced forces. The overall force acting on the object is called the **resultant force**. If the forces are balanced, the resultant force is zero.

If the forces on an object are unbalanced, this is what happens:
•a stationary object starts to move in the direction of the resultant force
•a moving object changes speed and/or direction in the direction of the resultant force
In the example below, the resultant force is the difference between the two forces:
100 – 60 = 40 N (to the right)

**Balanced forces**

When two forces acting on an object are equal in size but act in opposite directions, we say that they are **balanced forces**.
If the forces on an object are balanced (or if there are no forces acting on it), this is what happens:
•a stationary object stays still
•a moving object continues to move at the same speed and in the same direction
Remember that an object can be moving, even if there are no forces acting on it.



# KS3 Forces

## Types of Forces

### Contact Forces

Contact forces act between objects that are physically touching each other.

**friction** – The force between two surfaces that are sliding, or trying to slide, past each other.

**air resistance** – The force that acts in the opposite direction to an object's movement as it moves through the air.

**reaction** – The force that supports an object on a solid surface.

**tension** – The force transmitted through a rope, string or wire when pulled by forces acting on each end.

**upthrust** – The upward force exerted by a fluid on an object floating in it.

### Non-Contact Forces

Non-contact forces act between objects without them physically touching each other.

**gravitational force** – The force acting on an object due to gravity.

**magnetic force** – The force exerted by a magnetic field on a magnetic material.

**electrostatic force** – The force that acts between two charged objects.

## Measuring Forces

Forces are measured in newtons (N).

Forces can be measured using a newton meter.

## Interaction Pairs

Forces always act in pairs.

The person's weight pushes down on the chair.

The reaction force from the chair pushes the person up.

## Force Fields

Non-contact forces act in fields. The field is the area around the object where the force is exerted.

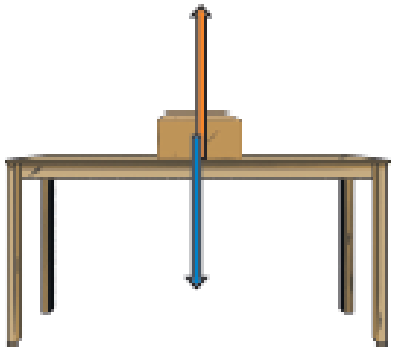
As an object gets farther away from the object exerting a force, the field gets weaker. For example, if a magnetic object is farther from a magnet, it will experience a smaller force of attraction towards the magnet.

## Force Diagrams

You can't see forces but you can see their effects.

We add force arrows to a diagram to show which forces are acting. The arrows show the direction and the size of the force (the longer the arrow, the bigger the force).

The force arrows should touch the object in the diagram.



## Mass and Weight

The moon has a smaller gravitational field strength than the Earth. This means that an object or person would weigh less on the moon. Their mass would remain the same.

mass: 65kg

weight 650N

mass: 65kg

weight 104N

## Mass

Mass is the amount of matter an object is made up of. Mass is measured in kilograms (kg).

The value of mass will stay the same when the location of the object changes.

## Weight

Weight is the total amount of force acting on an object due to gravity. Weight is measured in newtons (N).

The value of weight will change depending on the gravitational field strength acting on the object.

To calculate weight we use the equation:

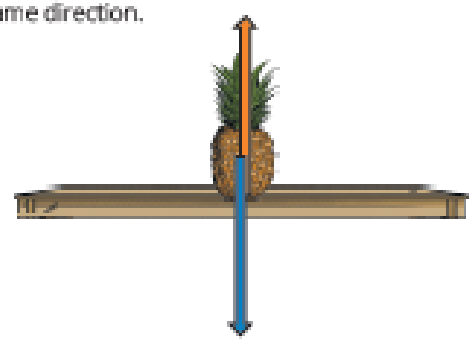
**weight = mass × gravitational field strength**

The gravitational field strength on Earth is 10N/kg.

Activity: Make a new knowledge organiser that combines the information in the three pages on forces. Add diagrams etc and explain it all to your parent.

## Balanced Forces

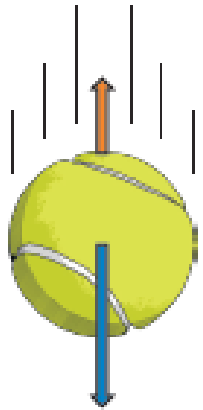
When the forces acting on an object are the same size but in opposite directions, we say that the forces are **balanced**. When this happens, the object is in a state of **equilibrium**. There will be no change to the motion of the object: a stationary object will remain stationary and a moving object will continue to move at a constant speed in the same direction.



## Unbalanced Forces

**Unbalanced** forces act in opposite directions but are not the same size. One force is greater than the other.

If forces are unbalanced there will be a change in the motion of the object. It may speed up, slow down or change direction.



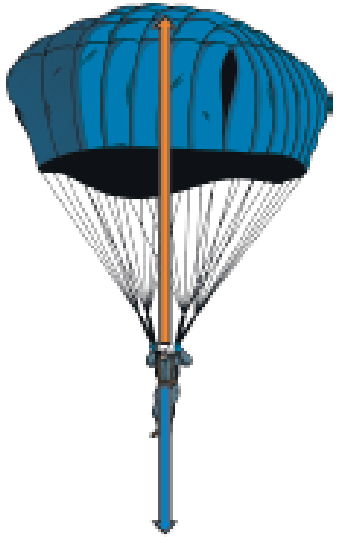
## Changing Speed

If the driving force is bigger than the resistive forces acting on an object, the object will speed up (**accelerate**).

When the driver presses the accelerator in a car, the driving force increases so the car speeds up.

If the resistive forces on an object are larger than the driving force, the object will slow down.

When the person releases their parachute, the force of air resistance is larger than their weight so they will slow down.



## Reducing Resistive Forces

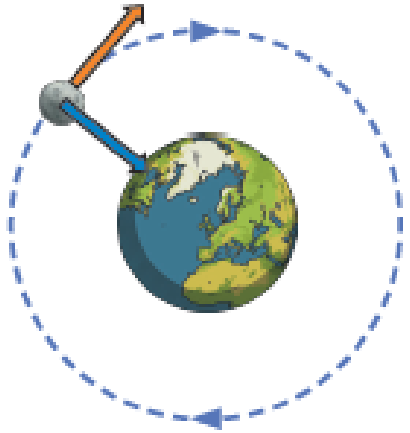
**Friction** can be reduced by using **lubrication**. Lubrication is grease or oil that helps two surfaces move past each other more easily.

Having a smaller **surface area** in contact with a surface will also reduce the amount of friction.

**Drag forces**, like water resistance and air resistance, can be reduced by making objects more **streamlined**.

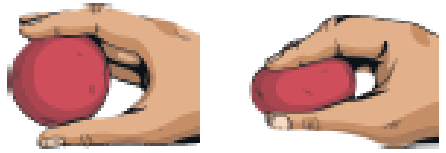
## Changing Direction

The gravitational field around the Earth keeps the Moon in orbit. The Moon is moving at a constant speed but the Earth's gravity pulls it towards the Earth, so the Moon moves in a circular path around the Earth.



## Changing Shape

Elastic objects can be compressed or stretched by forces. When an object is changed in these ways, we say it is **deformed**.



The amount that an object is stretched is called the **extension**.

## Hooke's Law

The extension of some elastic objects can be described by Hooke's law.

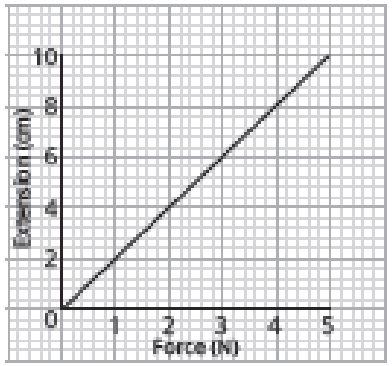
**force (N) = spring constant (N/m) × extension (m)**

**Spring constant** is a measure of the stiffness of a material. It indicates the force needed to change the length of a material by 1m. The greater the spring constant, the greater the force needed to stretch the material.

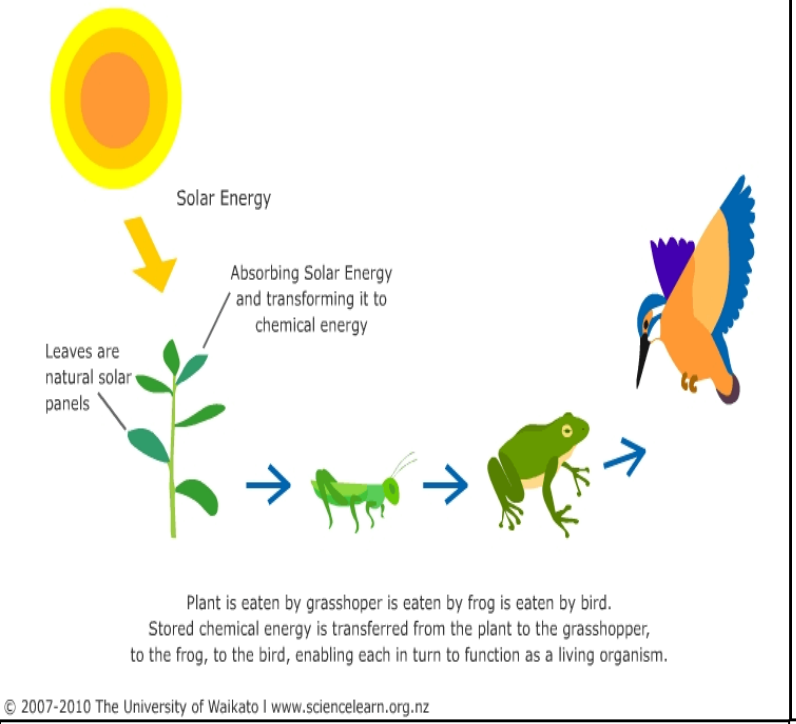
If you plot the extension of a spring against the force applied to the spring the results give a straight line through the origin.

The graph shows that if you double the force, the extension also doubles.

**Hooke's law** states that extension is **directly proportional** to the force applied.



# BIO-ENERGETICS (ENERGY IN BIOLOGICAL SYSTEMS)

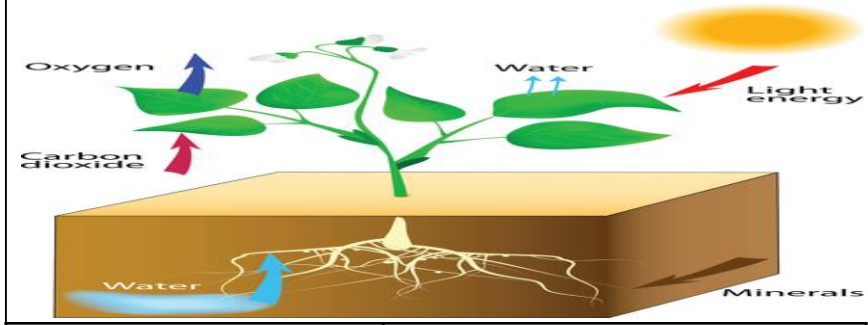



Plant is eaten by grasshoper is eaten by frog is eaten by bird.
Stored chemical energy is transferred from the plant to the grasshopper, to the frog, to the bird, enabling each in turn to function as a living organism.



The feeding relationships are one way in which organisms depend on each other. To begin with, almost all organisms rely on the Sun as the original source of energy for their ecosystem. **Plants** and **algae** can make use of the Sun's energy to produce food molecules, in the process of photosynthesis. This is why they are called **producers**. Other types of organism can't do this, so they rely on the plants and algae.

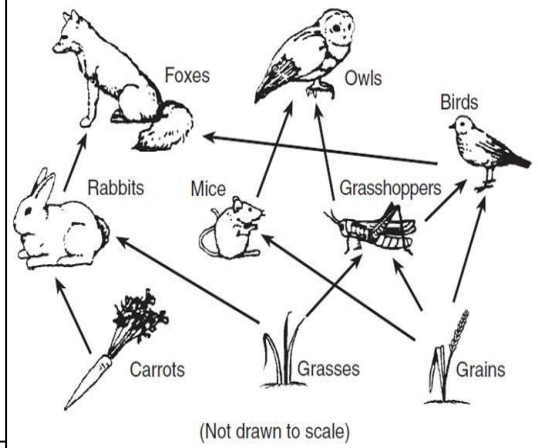
- **Consumers** eat the producers, so the energy from the sun flows through the ecosystem. Molecules (which contain the energy) also flow through, and get recycled when organisms produce waste (poo and wee!) and after they die and decay. The diagram helps to show this.
- You can see that all the organisms in the ecosystem depend on each other. This is called **interdependence.** The consumers wouldn't surviv without the producers capturing energy from the sun, the producers wouldn't survive without the decomposers recycling molecules for them to use (e.g. nutrients from the soil),




**Plants make use of light energy from the environment (ENDOTHERMIC) to make food (glucose)**

Carbon dioxide + Water
→
Oxygen + Glucose

A **food web** shows many **feeding relationships.** It connects many food **chains**, since many organisms eat more than one other organism, and are eaten by more than one other.




(Not drawn to scale)

**Aerobic respiration**

**Respiration with oxygen. Occurs inside the mitochondria continuously**

Glucose is oxidised by oxygen to transfer the energy the organism needs to perform it's functions.

Aerobic respiration releases a large amount of energy from each glucose molecule

**glucose + oxygen → carbon dioxide + water**

**1.** Name **three** non-contact forces.

Name **two** resistive forces.

Name **two** other forces.

**2.** Give the unit that is used for measuring forces.

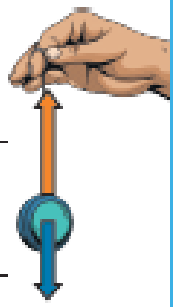
Name the piece of equipment used to measure force.

**3.** An object has a mass of 600g.
What is its mass in kilograms (kg)?

**4.** Give three things that might happen to an object if the forces on it are unbalanced.

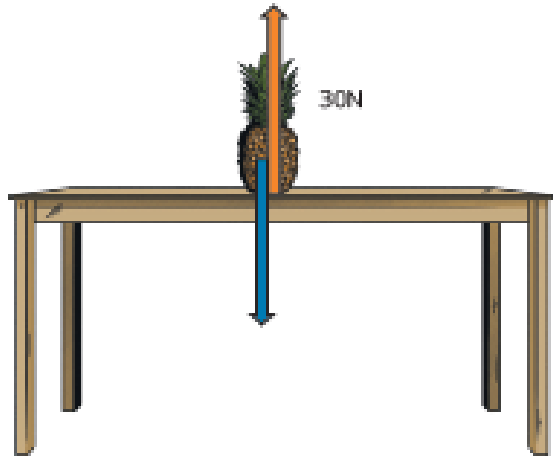
**5.** The diagram shows a yo-yo being used.

Label each arrow with the name of the force



A resistive force will also affect the movement of the yo-yo. What is the name of that force?

**6.** The diagram shows an object on a table.




The reaction force of the table acting on the object is 30N.
What is the weight of the object?

**7.** Write down the equation that links gravitational field strength, mass and weight.

**8.** The diagram shows a paper aeroplane that has been thrown across the room and is travelling forwards.

Draw an arrow on the diagram to show the direction of the gravitational force on the aeroplane. Label it A.

Draw an arrow on the diagram to show the direction that air resistance acts on the aeroplane. Label it B.


**9.** The mass of an object is 15kg.
The gravitational field strength on Earth is 10N/kg.

What is the object's weight on Earth?

The object is taken to Mars. Its mass does not change. Its weight on Mars is 55.5N.

What is the gravitational field strength on Mars?

**10.** A car has a mass of 2000kg.
Calculate its weight on Earth.

The car is used to drive to a holiday destination, using a full tank of petrol. The weight of the car after the journey is 19 200N. Calculate the mass of the car after the journey.

11.

A paperclip is placed into the magnetic field around a magnet.


What happens to the strength of the force experienced by the paperclip as it is moved further away from the magnet?

_____

_____

12.

The diagram shows a bike chain.

Before starting a race the cyclist oils the chain. Explain why.

_____

_____

_____

13.

The diagram shows two lorries.

lorry A

lorry B

The lorries have the same mass and produce the same thrust force from the engine.

Which lorry will travel the fastest?

_____

Explain why.

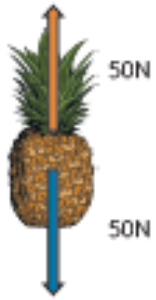
_____

_____

_____

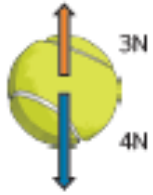
14.

For each of the examples below, tick one box to show whether the forces acting on the object are balanced or unbalanced.




balanced ☐

unbalanced ☐

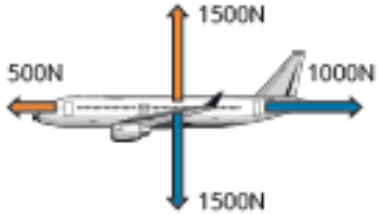



balanced ☐

unbalanced ☐


balanced ☐

unbalanced ☐




balanced ☐

unbalanced ☐


balanced ☐

unbalanced ☐

15.

The diagrams show the forces acting on three cars moving forwards.

Describe what happens to the motion of each car.

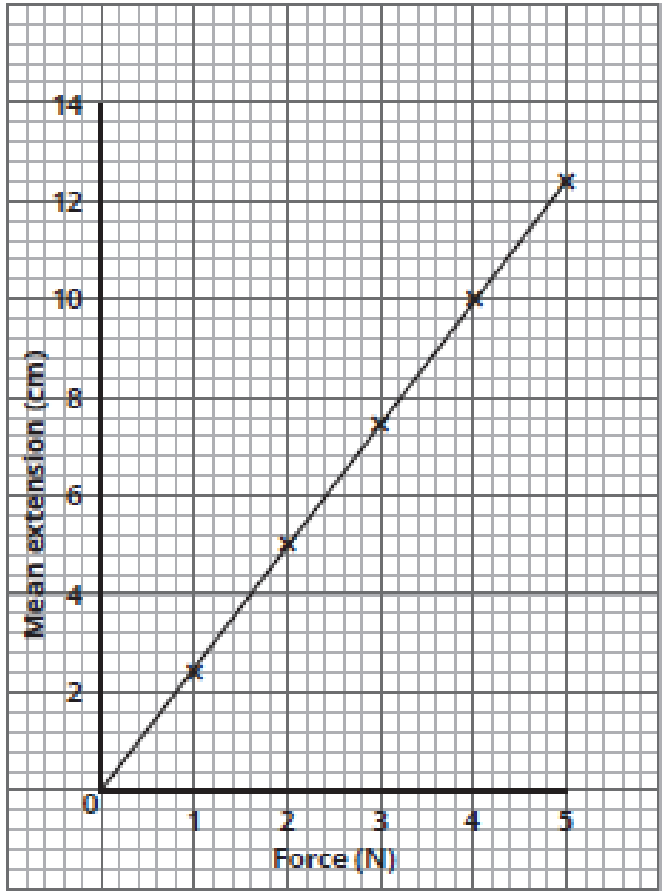

The car _____


The car _____


The car _____

_____

18. Some students investigate how the extension of a spring is affected by the force applied to the spring. They plot their results on the graph below.




Describe the relationship between the force applied to a spring and the extension of a spring.

Give the name of the law that describes this relationship.

19. Write down the equation that links extension, force and spring constant.

A spring has a spring constant of 20N/m and is extended by 0.2m.

Calculate the force applied to the spring.

20. A force of 6N is applied to a spring with a spring constant of 16N/m.

Calculate the extension of the spring in cm.

A further 4N is applied to the spring. After 2N the spring reaches its elastic limit.

Describe what happens to the relationship between the extension and the force applied after this point.

# Knowledge Organiser: Year 7 Summer Term 1 The internet

## Summary

The internet has changed the way we work and play. It allows us to communicate, to share data and to look for I information in a matter of seconds. All this is possible through the use of computers and networks.

The internet is a global network of computers. All computer devices (including PCs, laptops, games consoles and smartphones) that are connected to the internet form part of this network. Added together, there are billions of computers connected to the internet, all able to communicate with each other.

Today, the internet is a massive part of our daily lives.

When you chat to somebody on the internet or send them an e-mail, do you ever stop to think how many different computers you are using in the process? There's your computer/smartphone , of course, and another one at the other end where the other person is ready to communicate with you. But in between your two machines, making communication between them possible, there are probably about a dozen other computers bridging the gap. Collectively, all the world's linked-up computers are called the Internet. How do they talk to one another?

## So how does information move around the internet?

Let's imagine you are visiting a webpage with an image on it. How does the image get to your computer?

The image is stored on a web server. Your computer *sends a request* to the **web server** for the image.

The request is sent in a 'packet'. Special computers called **routers**, and **devices** direct the **packet** from your computer to the web server. The web server might be close by or on the other side of the world.

The packet can be sent across the **world** through fibre optic cables under the sea or even by satellite.

Now that the packet has arrived the web server opens it and reads your computer's request, in this case 'please send me this image'.

The web server sends these packets back to your computer and once again routers and switches direct them.

The routers try to find the fastest possible route for each packet. They might take different routes and might not arrive in the same order they were sent. Now that all the packets have been received the information attached to them tells your computer how to put them back together and the image will display on your screen.

This whole process of sending a request and receiving the packets usually takes less than a second!

## Internet



## HTML

HTML uses special bits of programming language called "tags" to let the browser know how a webpage should look.

## Key Vocabulary

| | |
|---|---|
| **Hyperlink** | Websites and webpages are joined together using hyperlinks. Clicking on a hyperlink takes us to another site or page. |
| **Http** | Tells the computer to use the hyper text transfer protocol for communicating with the website |
| **HTML** | Hypertext Markup Language. |
| **Internet** | The internet is a global network of computers. |
| **Protocol** | A set of rules or procedures for transmitting data between electronic devices |
| **URL** | A website's address .Each address contains the prefix 'http:' which tells the computer to use the hyper text transfer protocol for communicating with the website. |
| **VOIP** | Internet protocol (VoIP) is the technology that allows us to video conference. Many companies offer free VoIP services, including Skype, Apple Facetime and WhatsApp. |
| **World Wide Web** | World Wide Web is the part of the internet that can be accessed through websites |

## VoIP and video conferencing

https://bbc.in/2scPjly



Activity: Use a video conferencing piece of software to explain the contents of this knowledge organiser to someone in your family who is not technically savvy. Break the knowledge down into lessons which you can do one a week.

# Year 7 Knowledge Organiser: Settlements

## Topics covered

- ✓ What is a settlement?
- ✓ Settlement sites
- ✓ Site factors
- ✓ Settlement hierarchy
- ✓ Settlement functions
- ✓ Mega-cities
- ✓ Impossible cities
- ✓ Future Cities



## Key Ideas:

1. I can describe settlement characteristics (area size, population, services)
2. I can describe settlement site factors (where people choose to live)
3. I can explain how and why settlements can grow (migration/birth rates)
4. I can suggest how some cities are becoming more 'sustainable'

## Skills

- ❑ Recognising geographical features from maps
- ❑ Describing geographical features from images
- ❑ Describing a distribution on a global scale
- ❑ Research using ICT
- ❑ Creating an informative leaflet
- ❑ Designing using MSOffice

## Places and Environments

- ❖ Norwich
- ❖ London
- ❖ Rio de Janeiro
- ❖ Maldives
- ❖ Las Vegas

## Key Terms Used in this Unit

- ❑ Site factors
- ❑ Aspect
- ❑ Raw materials
- ❑ Population
- ❑ Terrain
- ❑ Springs
- ❑ Bridging point
- ❑ Route centre
- ❑ Services
- ❑ Administration
- ❑ Residential
- ❑ Industrial
- ❑ Migration
- ❑ Employment
- ❑ Growth
- ❑ Arid
- ❑ Xeriscaping
- ❑ Sustainable


# Year 7 Knowledge Organiser: Go Green

## Topics covered

- ✓ Types of resources
- ✓ Finite and Infinite resources
- ✓ Non-renewable energies
- ✓ Nuclear power
- ✓ Renewable energies
- ✓ Wind energy
- ✓ Waste and pollution
- ✓ The 3 R's
- ✓ Saving energy in the home

## Key Ideas:

1. I can describe how fossil fuels form and can explain why people want to end their use
2. I can describe advantages and disadvantages of renewable energy types
3. I can explain different opinions on some controversial (not all people agree upon) energy sources
4. I can design an eco-home

## Skills

- ❑ To read source information on energy types
- ❑ To use digital mapping (GIS) to investigate site factors
- ❑ To research energy types using ICT
- ❑ To use numeracy skills to cost an eco-home design

## Places and Environments

- ❖ Scroby Sands, Norfolk Coast
- ❖ Sizewell power station, Suffolk

## Key Terms Used in this Unit

- ❑ Fossil Fuels
- ❑ Finite
- ❑ Non-renewable
- ❑ Sedimentary Rocks
- ❑ Geological
- ❑ Carbon Dioxide
- ❑ Methane
- ❑ Greenhouse effect
- ❑ Global Warming
- ❑ Radioactive
- ❑ Landfill sites
- ❑ Recyclable
- ❑ Bio-degradeable
- ❑ Insulation
- ❑ Grey water
- ❑ Conservation
- ❑ Sustainable
- ❑ Passive home

Activity:  Use technology to find out how the virus is changing our energy use and pollution. Write a report linking to the ideas in settlements and go green.  Your report should include as much of the key vocabulary as possible.

Activity:  This is perfect if you have a younger sibling.  You can do it together.  Draw a table showing the countries, flags and capital cities. Do one per continent.  Put as many countries in as you can.

| Country | Nationality | Capital | Flag |
|---|---|---|---|
| Portugal | Portuguese | Lisbon |  |
| Spain | Spanish | Madrid |  |
| Great Britain | | |  |

# Year 7 Summer Term German Knowledge Organiser

## Freizeit; Mein Zuhaus

| Sport | Sport |
|---|---|
| Ich spiele … | I play … |
| Ich spiele gern … | I like playing … |
| Ich spiele nicht gern … | I don't like playing … |
| Er / Sie spielt gern … | He / She likes playing … |
| Basketball. | basketball. |
| Federball. | badminton. |
| Fußball. | football. |
| Rugby. | rugby. |
| Tennis. | tennis. |
| Tischtennis. | table tennis. |
| Volleyball. | volleyball. |
| Spielst du gern … ? | Do you like playing …? |
| Ich gehe … | I go … |
| Ich gehe gern … | I like going … |
| Ich gehe nicht gern … | I don't like going … |
| Er / Sie geht gern … | He / She likes going … |
| angeln. | fishing. |
| klettern. | climbing. |
| reiten. | riding. |
| schwimmen. | swimming. |
| segeln. | sailing. |
| wandern. | hiking. |
| windsurfen. | windsurfing. |
| Snowboard fahren | snowboarding |
| Wildwasser fahren | whitewater rafting |
| Kanu fahren | canoeing |
| Mountainbike fahren | mountain biking |

| Freizeit | Free time |
|---|---|
| Was machst du in deiner Freizeit? | What do you do in your free time? |
| Ich spiele Computerspiele. | I play computer games. |
| Ich spiele Gitarre. | I play the guitar. |
| Ich gehe in die Stadt. | I go into town. |
| Ich gehe in den Jugendklub. | I go to the youth club. |
| Ich gehe ins Kino. | I go to the cinema. |
| Ich besuche meine Freunde. | I visit my friends. |
| Ich fahre Rad. | I go cycling. |
| Ich faulenze. | I laze around. |
| Ich höre Musik. | I listen to music. |
| Ich lese. | I read. |
| Ich sehe fern. | I watch TV. |
| Ich tanze. | I dance. |
| Hörst du gern Musik? | Do you like listening to music? |
| Fährst du gern Rad? | Do you like cycling? |
| Liest du gern? | Do you like reading? |
| Siehst du gern fern? | Do you like watching TV? |
| Gehst du gern ins Kino? | Do you like going to the cinema? |
| Spielst du gern Tennis? | Do you like playing tennis? |

| Lieblingssachen | Favourite things |
|---|---|
| Was ist dein … | What is your … |
| Lieblingsauto? | favourite car? |
| Lieblingshaustier? | favourite pet? |
| Lieblingssport? | favourite sport? |
| Was ist deine … | What is your … |
| Lieblingsmannschaft? | favourite team? |
| Lieblingssendung? | favourite programme? |
| Lieblingsfarbe? | favourite colour? |

# Year 7 Summer Term German Knowledge Organiser

## Freizeit; Mein Zuhaus

| | |
|---|---|
| Lieblingsmusik? | favourite music? |
| Lieblingszahl? | favourite number? |
| Mein / Meine… ist … | My … is … |

| **Wie oft?** | **How often?** |
|---|---|
| Wie oft spielst du Fußball? | How often do you play football? |
| Wie oft gehst du schwimmen? | How often do you go swimming? |
| Wie oft spielst du am Computer? | How often do you play on the computer? |
| Wie oft siehst du fern? | How often do you watch TV? |
| Wie oft liest du ein Buch? | How often do you read a book? |
| Wie oft fährst du Rad? | How often do you go cycling? |
| Jeden Tag. | Every day. |
| Einmal pro Woche. | Once a week. |
| Am Wochenende. | At the weekend. |
| Nie. | Never. |

| **Pläne** | **Plans** |
|---|---|
| Hast du am Samstag Zeit? | Have you got time on Saturday? |
| Möchtest du … | Would you like to … |
| Fußball spielen? | play football? |
| Tennis spielen? | play tennis? |
| Basketball spielen? | play basketball? |
| ins Kino gehen? | go to the cinema? |
| in die Stadt gehen? | go into town? |
| in die Disko gehen? | go to the disco? |
| in den Jugendklub gehen? | go to the youth club? |
| Ja, gern. | Yes, I would. |
| Ja, das mag ich. | Yes, I like that. |

| | |
|---|---|
| Nein, das mag ich nicht. | No, I don't like that. |
| Nein, das ist langweilig. | No, that's boring. |
| Wann treffen wir uns? | When shall we meet? |
| Um … Uhr. | At … o'clock. |
| Bis dann. | See you then. |
| Bis Samstag. | See you Saturday. |

# Die Schule; Familie und Freunde

| Meinungen | Opinions |
|---|---|
| Wie findest du Deutsch? | What do you think of German? |
| Ich finde es … | I think it's … |
| gut. | good. |
| schlecht. | bad. |
| interessant. | interesting. |
| langweilig. | boring. |
| einfach. | easy. |
| schwierig. | difficult. |
| toll. | great. |
| furchtbar. | awful. |

| Die Uhrzeit | Telling the time |
|---|---|
| Wie viel Uhr ist es? | What's the time? |
| Es ist neun Uhr. | It's nine o'clock. |
| Es ist neun Uhr dreißig. | It's nine-thirty. |
| Wann beginnt Deutsch? | When does German start? |
| Wann endet Deutsch? | When does German end? |
| Um zehn Uhr fünfzig. | At ten-fifty. |

| Das Pausenbrot | Snacks at break |
|---|---|
| Was isst du in der Pause? | What do you eat at break? |
| Ich esse … | I eat … |
| einen Apfel. | an apple. |
| eine Orange. | an orange. |
| eine Banane. | a banana. |
| ein Brötchen. | a roll. |
| Kuchen. | cake. |
| Schokolade. | chocolate. |
| Kekse. | biscuits. |
| Chips. | crisps. |
| Bonbons. | sweets. |
| Ich esse nichts. | I don't eat anything. |
| Was trinkst du in der Pause? | |
| Ich trinke Cola. | I drink Coke |
| Orangensaft. | orange juice. |
| Wasser. | water. |
| Ich trinke nichts. | I don't drink anything. |
| Ja, bitte? | Can I help you? |
| Ein Brötchen, bitte. | A roll, please. |

| | |
|---|---|
| Das macht fünfzig Cent. | That's fifty cents. |
| Bitte. | Here you are; You're welcome |
| Danke. | Thanks. |

| Die Schuluniform | School uniform |
|---|---|
| der Pullover | jumper |
| der Rock | skirt |
| die Bluse | blouse |
| die Hose | trousers |
| die Jacke | blazer |
| die Krawatte | tie |
| das Hemd | shirt |
| das Kleid | dress |
| das Sweatshirt | sweatshirt |
| das T-Shirt | T-shirt |
| die Jeans | jeans |
| die Schuhe | shoes |
| die Socken | socks |

# Year 7 Spring Term German Knowledge Organiser

## Die Schule; Familie und Freunde

| | |
|---|---|
| die Sportschuhe | trainers |
| die Stiefel | boots |
| Der Rock ist (blau). | The skirt is (blue). |
| Die Socken sind (gelb). | The socks are (yellow). |
| Was trägst du in der Schule? | What do you wear to school? |
| Ich trage … | I wear … |
| einen Rock. | a skirt. |
| einen Pullover. | a jumper. |
| eine Hose. | trousers. |
| eine Jacke. | a blazer / jacket. |
| eine Krawatte. | a tie. |
| ein Hemd. | a shirt. |
| ein T-Shirt. | a T-shirt. |
| ein kleid. | a dress. |
| ein Sweatshirt. | a sweatshirt. |
| Jeans. | jeans. |
| Socken. | socks. |
| Schuhe. | shoes. |
| Stiefel. | boots. |
| Sportschuhe. | trainers. |

| | |
|---|---|
| Ich finde das cool | I think it's cool. |
| bequem. | comfy. |
| schick. | smart. |
| gut. | good. |
| Ich habe keine Schuluniform. | I don't have a school uniform. |

| **Geschwister** | **Brothers and sisters** |
|---|---|
| Hast du Geschwister? | Do you have any siblings? |
| Ich habe … | I have… |
| einen Bruder. | a brother. |
| einen Halbbruder. | a half-brother. |
| einen Stiefbruder. | a stepbrother. |
| zwei Brüder. | two brothers. |
| eine Schwester. | a sister. |
| eine Halbschwester. | a half-sister. |
| eine Stiefschwester. | a stepsister. |
| zwei Schwestern. | two sisters. |
| Ich bin Einzelkind. | I am an only child. |

| **Haustiere** | **Pets** |
|---|---|
| Hast du ein Haustier? | Do you have a pet? |
| Ich habe … | I have … |
| einen Goldfisch. | a goldfish. |
| zwei Goldfische. | two goldfish. |
| einen Hamster. | a hamster. |
| vier Hamster. | four hamsters. |
| einen Hund. | a dog. |
| drei Hunde. | three dogs. |
| einen Wellensittich. | a budgie. |
| sechs Wellensittiche. | six budgies. |
| eine Katze. | a cat. |
| sieben Katzen. | seven cats. |
| eine Schildkröte. | a tortoise. |
| zwei Schildkröten. | two tortoises. |
| eine Schlange. | a snake. |
| neun Schlangen. | nine snakes. |
| ein Kaninchen. | a rabbit. |
| fünf Kaninchen. | five rabbits. |
| ein Meerschweinchen. | a guinea pig. |
| Zehn Meerschweinchen | ten guinea pigs. |

# Die Schule; Familie und Freunde

| | |
|---|---|
| ein Pferd. | a horse. |
| acht Pferde. | eight horses. |
| Ich habe keine Haustiere | I don't have any pets. |

.

| **Familie** | **Family** |
|---|---|
| Das ist … | That's … |
| mein Vater. | my father. |
| mein Stiefvater. | my stepfather. |
| mein Großvater. | my grandfather. |
| mein Cousin. | my cousin (m) |
| mein Onkel. | my uncle. |
| mein Bruder. | my brother. |
| meine Mutter. | my mother. |
| meine Stiefmutter. | my stepmother. |
| meine Großmutter. | my grandmother. |
| meine Schwester. | my sister. |
| meine Tante. | my aunt. |
| meine Cousine. | my cousin (f) |
| Ist das … | Is that … |
| dein Onkel? | your uncle? |
| dein Bruder? | your brother? |

| | |
|---|---|
| dein Vater? | your father? |
| dein Stiefvater? | your stepfather? |
| dein Großvater? | your grandfather? |
| dein Cousin? (male)? | your cousin |
| deine Mutter? | your mother? |
| deine Stiefmutter? | your stepmother? |
| deine Schwester? | your sister? |
| deine Großmutter? | your grandmother? |
| deine Tante? | your aunt? |
| deine Cousine? | your cousin (f)? |
| Wie heißt er / sie? | What is he / she called? |
| Er / Sie heißt … | He / She is called … |
| Wie alt ist er / sie? | How old is he / she? |
| Er / Sie ist elf Jahre alt. | He / She is 11 years old. |

| **Die Zahlen 70–100** | | **Numbers 70–100** |
|---|---|---|
| siebzig | 70 | achtzig 80 |
| einundsiebzig | 71 | neunzig 90 |
| zweiundsiebzig | 72 | hundert 100 |
| dreiundsiebzig | 73 | |

| **Wie siehst du aus? What do you look like?** | |
|---|---|
| Ich habe … | I have … |
| Du hast … | You have … |
| Er hat … | He has … |
| Sie hat … | She has … |
| blaue Augen. | blue eyes. |
| braune Augen. | brown eyes. |
| graue Augen. | grey eyes. |
| grüne Augen. | green eyes. |
| braune Haare. | brown hair. |
| blonde Haare. | blond hair. |
| rote Haare. | red hair. |
| schwarze Haare. | black hair. |
| lange Haare. | long hair. |
| kurze Haare. | short hair. |
| glatte Haare. | straight hair. |
| lockige Haare. | curly hair. |
| Ich bin … | I am … |
| Du bist … | You are … |
| Er / Sie ist … | He / She is … |
| groß. | tall. |

# Die Schule; Familie und Freunde

| | |
|---|---|
| mittelgroß. | medium height. |
| klein. | short. |
| schlank. | slim. |
| kräftig. | strong. |
| dick. | fat. |

| **Wie bist du?** | **What are you like?** |
|---|---|
| Ich bin (freundlich). | I am (friendly). |
| Wie ist er / sie? | What is he / she like? |
| Er / Sie ist … | He / She is … |
| lustig. | funny. |
| laut. | noisy. |
| schüchtern. | shy. |
| intelligent. | intelligent. |
| sportlich. | sporty. |
| musikalisch. | musical. |
| kreativ. | creative. |
| faul. | lazy. |
| launisch. | moody. |
| unpünktlich. | unpunctual. |
| nicht sehr | not very |
| ziemlich | fairly |

# Year 7 History – Native Americans, Tudor England and the Reformation

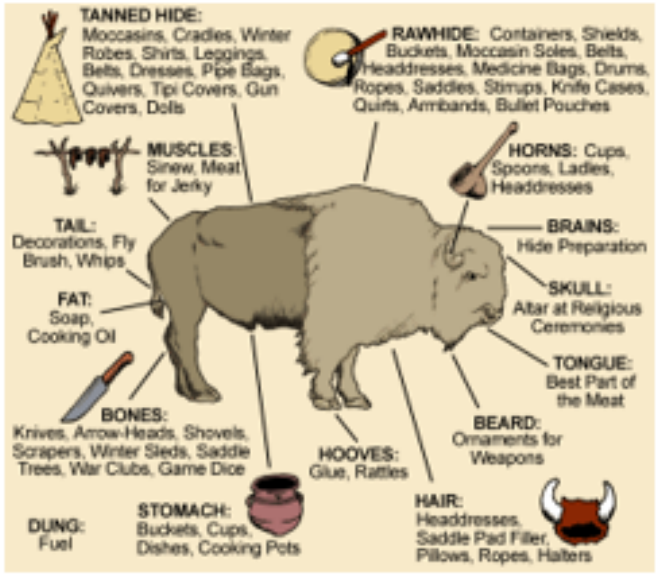
| Key words | |
|---|---|
| Native Americans | General term used to describe the hundreds of different tribes who have lived in North America for thousands of years, long before it was settled by white Europeans |
| Buffalo | A large mammal living in North America. Many tribes relied on the Buffalo as a source of food, shelter, clothing, medicine and many other uses |
| Nomadic | A way of life in which a tribe or group travels and settles temporarily rather than setting up towns, villages or cities |
| The Great Plains | An area of the USA covered mostly with grassland – once home to Buffalo and tribes such as the Sioux and Apache. |
| The Reformation | A process of religious change in early modern Europe, where much of Europe converted from Catholicism to Protestantism |
| Catholicism | A type of Christianity that believes that the Pope is the head of the Church and that the Bible and church services should be in Latin |
| Protestantism | A type of Christianity that does not believe that the Pope is the head of the Church and that the Bible and church services should be read by people in the own language |
| Henry VIII | King of England between 1509 and 1547. Most famous for his six wives, Henry was also important in making England a more Protestant country with himself as head of the English Church |
| Martin Luther | A German Protestant who wrote several important books/articles about religion that helped spread the Protestant religion around Europe |

## Native Americans

Before white settlers arrived in North America it was known as 'Turtle Island' and was inhabited by millions of people organised into hundreds of different tribes. Each tribe had their own way of life, including different diets, spiritual beliefs, languages and customs.

Some of the largest tribes were the Sioux, Navajo, Cherokee, Apache and Iroquois. Although up to 90% of the population were killed by white settlers, most tribes still remain today. However most of their original territory was taken from them and some now live in different regions to their ancestors.

Some tribes lived on the Great Plains (see key words above). These tribes mostly lived nomadically and hunted the Buffalo, of which they used the entire body. For example, they lived in Tipis, a type of tent build from Buffalo hide. Plains tribes also frequently raided each other, and the white settlers once they arrived. It was the Plains tribes who were some of the last to be defeated by the US military around the year 1900. On the right is a diagram showing the many different uses of the Buffalo.




Activity: Recreate the knowledge organiser into new resources. Make flash cards for key words. Draw a mind map of the uses of the buffalo by native Americans. What is thanksgiving and how does this celebration link to the key words?

## The Tudors

The Tudors were a family who ruled England between 1485 and 1603. They are remembered for the amount that they changed England. One of the biggest changes they introduced under Henry VIII, Edward VI and Elizabeth I was the English Reformation. This was when England changed from a Catholic country to being a Protestant country.

| Causes of the Reformation | Consequences |
|---|---|
| **The Reformation in Europe** | Protestants throughout Europe like Martin Luther helped spread Protestant ideas. These books reached England and many people began to change their religion. |
| **Anne Boleyn** | Henry VIII's second wife and a Protestant, Anne encouraged Henry to end his first marriage and convert to Protestantism. Henry eventually did this and fell out with the Pope. |
| **Corruption in the Catholic Church** | Probably exaggerated by Henry VIII, monks and other Catholics were accused of drinking, gambling and being too wealthy. As a result, Henry closed down their monasteries. |
| **Actions of Protestant monarchs** | Although Henry VIII was the one to bring in the Protestant Reformation, it was actually under Edward VI and Elizabeth I that Protestant changes occurred much more rapidly. Both introduced a 'book of common prayer' that was in English and preached Protestant ideas. |

Henry VII, reigned 1485–1509

Henry VII took the throne by defeating the previous King, Richard III. Henry made efforts to control the barons in England. He taxed them heavily and punished them harshly for disobeying him.

Henry VIII, reigned 1509–1547

Determined to have a son of his own, Henry married six different women and had three surviving children. In the 1530s Henry claimed to have become a Protestant and changed the religion of England to Protestant with himself as head of the Church.

Edward VI, reigned 1547–1553

Henry VIII's only son and just nine years old when he was crowned King and dead by the age of 15, Edward never really had the chance to rule England. Edward was raised as a Protestant so England became more Protestant during his reign.

Mary I, reigned 1553–1558

Mary was Henry VIII's eldest daughter and a strong Catholic. Nicknamed 'bloody Mary' she is often remembered for executing many Protestants but was also a strong queen in a difficult time.

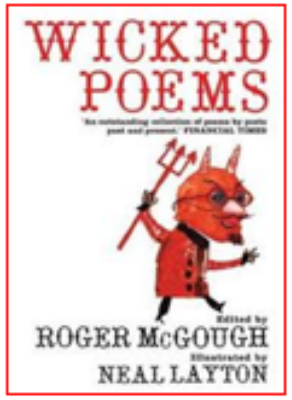
Elizabeth I, reigned 1558–1603

Elizabeth was Henry VIII's youngest child and a Protestant like her brother. Often remembered as one of England's greatest queens, she continued to make England more Protestant, with increasingly harsh punishments of Catholics who resisted.

Activity: Draw a timeline of events. Use the monarchs as a starting point. Augment your work with additional research.

## Vocabulary to learn

Syllable
Alliteration
Simile
Metaphor
Personification
Onomatopoeia
Stanza
Rhyme
Rhythm
Pace
Speaker
Tone
Inference
Explicit
Implicit
Technique
Method
feature




**Structure analysis - methods:**

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
  - inside to outside (and vice versa)
  - focus
  - time
  - topic
  - setting/place
  - mood/atmosphere
  - description to dialogue (and vice versa)

**Language analysis Checklist:**

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings

| Sentence Form | Definition | Example |
|---|---|---|
| **Fragment sentence** | An incomplete idea. | *Rolling thunder.* |
| **Simple sentence** | Contains one complete idea in an independent clause. | *The lightning flashed.* |
| **Compound sentence** | Contains two independent clauses linked by a conjunction or a semi-colon. | *The lightning flashed **and** the rain fell.*<br>*The lightning flashed; the rain fell.* |
| **Complex sentence** | Contains an independent clause and at least one dependent clause. | *Despite the thunder and lightning, there was no rain.* |

## TIPTOP

**PARAGRAPHS**

**Time – change in TIME**

**Place – change in PLACE**

**Topic – change in TOPIC**

**Person – change in SPEAKER**

**Literary devices and word class**

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass danced in the wind*
- Simile – as/like/as if – *he was like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds - *really rather raucous*
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote **neatly**
- connotations of words – associations – night-time = mystery

Dear Student,

Please find enclosed your Knowledge Organiser for English together with a range of activities that you need to complete over the next six weeks. We also include a copy of an optional project. We recognise that some of these activities could be impossible for you to complete at present, but if you would like to have a go at any of the activities you can bring this project back to school when we resume our normal work pattern. The project is optional, however, there will be prizes for students who work hard against the odds to complete these activities!

Regards.

Your English Teachers

## Activities:

- Look up and define any of the key words in the purple box that you don't feel confident with.
- Look, cover and copy the key words in the purple box. Do this each day until you get them all right. You could finish your learning of these words by getting a parent or sibling to test you on all of them.
- Using the poems on the next page, highlight any structural devices from the red box that you can see. For example, does the poem begin with a happy tone/mood but then change towards the end? This would be a 'shift'. Perhaps the poet describes something within the poem in great detail – this would be a 'zoom'. Are there any repeated words or images?
- For each poem, write an essay, in PEE (point, evidence/quote, explain), about how the poet uses language (words and phrases) and methods to create impact/have an effect on the reader. You should spend about an hour on each essay, so don't try to do them all in one day! Space them out; perhaps do one a week. Use the green and blue box to help you and to check your work.
- Choose a poem to see how the poet uses punctuation. Look up what the word 'cesura' means and annotate (label) why you think the poet has used any full stops, question marks, exclamation marks or speech marks within their poem.
- Copy out your favourite poem to practise your neatest handwriting, taking care to ensure the lines are the right length and the punctuation and capital letters are used in the same way. Also make sure the stanzas (poetry paragraphs) are clearly spaced/divided so it looks exactly as it does on the page you are copying from. Decorate your poem with the imagery it creates in your mind.
- Write your own poem/poems, using the techniques you have learnt from your knowledge organisers and the activities you have already completed. Use the checklists to use as many techniques, both linguistic and structural, as you can to affect your reader.

## Timothy Winters Charles Causley

Timothy Winters comes to school
With eyes as wide as a football pool,
Ears like bombs and teeth like splinters:
A blitz of a boy is Timothy Winters.

His belly is white, his neck is dark,
And his hair is an exclamation mark.
His clothes are enough to scare a crow
And through his britches the blue winds blow.

When teacher talks he won't hear a word
And he shoots down dead the arithmetic-bird,
He licks the patterns off his plate
And he's not even heard of the Welfare State.

Timothy Winters has bloody feet
And he lives in a house on Suez Street,
He sleeps in a sack on the kitchen floor
And they say there aren't boys like him anymore.

Old man Winters likes his beer
And his missus ran off with a bombardier.
Grandma sits in the grate with a gin
And Timothy's dosed with an aspirin.

The Welfare Worker lies awake
But the law's as tricky as a ten-foot snake,
So Timothy Winters drinks his cup
And slowly goes on growing up.

At Morning Prayers the Master helves
For children less fortunate than ourselves,
And the loudest response in the room is when
Timothy Winters roars "Amen!"

So come one angel, come on ten:
Timothy Winters says "Amen
Amen amen amen amen."
Timothy Winters, Lord.
Amen!

## Stealing Carol Ann Duffy

The most unusual thing I ever stole? A snowman.
Midnight. He looked magnificent; a tall, white mute
beneath the winter moon. I wanted him, a mate
with a mind as cold as the slice of ice
within my own brain. I started with the head.
Better off dead than giving in, not taking
what you want. He weighed a ton; his torso,
frozen stiff, hugged to my chest, a fierce chill
piercing my gut. Part of the thrill was knowing
that children would cry in the morning. Life's tough.
Sometimes I steal things I don't need. I joy-ride cars
to nowhere, break into houses just to have a look.
I'm a mucky ghost, leave a mess, maybe pinch a camera.
I watch my gloved hand twisting the doorknob.
A stranger's bedroom. Mirrors. I sigh like this – Aah.
It took some time. Reassembled in the yard,
he didn't look the same. I took a run
and booted him. Again. Again. My breath ripped out
in rags. It seems daft now. Then I was standing
alone among lumps of snow, sick of the world.
Boredom. Mostly I'm so bored I could eat myself.
One time, I stole a guitar and thought I might
learn to play. I nicked a bust of Shakespeare once,
flogged it, but the snowman was the strangest.
You don't understand a word I'm saying, do you?

## The Moon Roberts Louis Stevenson

The moon has a face like the clock in the hall;
She shines on thieves on the garden wall,
On streets and fields and harbour quays,
And birdies asleep in the forks of the trees.

The squalling cat and the squeaking mouse,
The howling dog by the door of the house,
The bat that lies in bed at noon,
All love to be out by the light of the moon.

But all of the things that belong to the day
Cuddle to sleep to be out of her way;
And flowers and children close their eyes
Till up in the morning the sun shall arise.

## The Fog Robert Frost

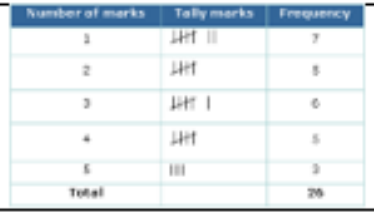
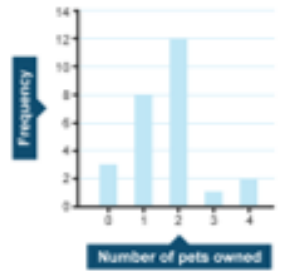
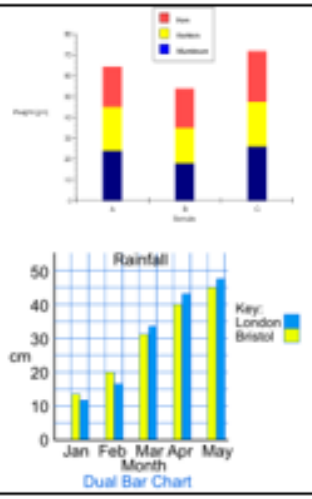
THE fog comes
on little cat feet.

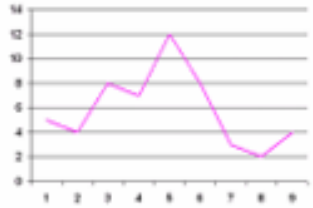
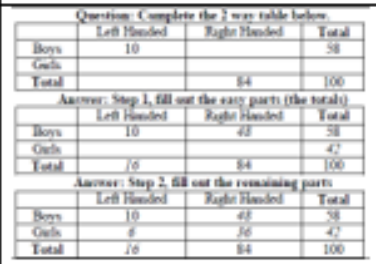
It sits looking
over harbour and city
on silent haunches
and then moves on.

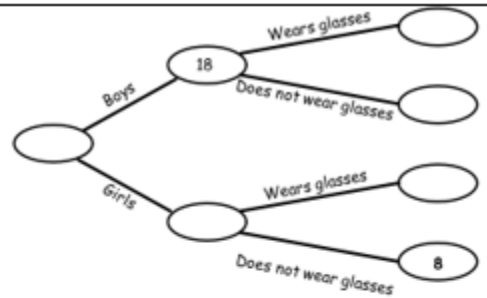
# Topic: Equations and Formulae

| Topic/Skill | Definition/Tips | Example |
|---|---|---|
| 1. Solve | To find the answer/value of something<br><br>Use inverse operations on both sides of the equation (balancing method) until you find the value for the letter. | Solve $2x-3=7$<br><br>Add 3 on both sides<br>$2x=10$<br>Divide by 2 on both sides<br>$x=5$ |
| 2. Inverse | Opposite | The inverse of addition is subtraction.<br>The inverse of multiplication is division. |
| 3. Rearranging Formulae | Use inverse operations on both sides of the formula (balancing method) until you find the expression for the letter. | Make x the subject of $y=\frac{2x-1}{z}$<br><br>Multiply both sides by z<br>$yz=2x-1$<br>Add 1 to both sides<br>$yz+1=2x$<br>Divide by 2 on both sides<br>$\frac{yz+1}{2}=x$<br>We now have x as the subject. |
| 4. Writing Formulae | Substitute letters for words in the question. | Bob charges £3 per window and a £5 call out charge.<br><br>$C=3N+5$<br><br>Where N=number of windows and C=cost |
| 5. Substitution | Replace letters with numbers.<br><br>Be careful of $5x^2$. You need to square first, then multiply by 5. | $a=3, b=2$ *and* $c=5$. Find:<br>1. $2a=2\times3=6$<br>2. $3a-2b=3\times3-2\times2=5$<br>3. $7b^2-5=7\times2^2-5=23$ |

# Topic: Representing Data

| Topic/Skill | Definition/Tips | Example |
|---|---|---|
| 1. Frequency Table | A record of how often each value in a set of data occurs. |  |
| 2. Bar Chart | Represents data as vertical blocks.<br><br>$x-axis$ shows the type of data<br>$y-axis$ shows the frequency for each type of data<br>Each bar should be the same width<br>There should be gaps between each bar<br>Remember to label each axis. |  |
| 3. Types of Bar Chart | Compound/Composite Bar Charts show data stacked on top of each other.<br><br>Comparative/Dual Bar Charts show data side by side. |  |

| | | |
|---|---|---|
| 4. Pie Chart | Used for showing how data breaks down into its constituent parts.<br><br>When drawing a pie chart, divide 360° by the total frequency. This will tell you how many degrees to use for the frequency of each category.<br><br>Remember to label the category that each sector in the pie chart represents. |  <br>If there are 40 people in a survey, then each person will be worth 360÷40=9° of the pie chart. |
| 5. Pictogram | Uses pictures or symbols to show the value of the data.<br><br>A pictogram must have a key. |  |
| 6. Line Graph | A graph that uses points connected by straight lines to show how data changes in values.<br><br>This can be used for time series data, which is a series of data points spaced over uniform time intervals in time order. |  |
| 7. Two Way Tables | A table that organises data around two categories.<br><br>Fill out the information step by step using the information given.<br><br>Make sure all the totals add up for all columns and rows. |  |

| | | |
|---|---|---|
| 8. Frequency Tree | A diagram showing how information is categorised into various categories.<br><br>The numbers at the ends of branches tells us how often something happened (frequency).<br><br>The lines connected the numbers are called branches. |  |
| 9. Sample Space | The set of all possible outcomes of an experiment. | |
| 10. Sample | A sample is a small selection of items from a population.<br><br>A sample is biased if individuals or groups from the population are not represented in the sample. | A sample could be selecting 10 students from a year group at school. |
| 11. Sample Size | The larger a sample size, the closer those probabilities will be to the true probability. | A sample size of 100 gives a more reliable result than a sample size of 10. |

| + | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |

Please use QR codes to support your knowledge:

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| Topic/Skill | Definition/Tips | Example |
|---|---|---|
| 1. Percentage | Number of parts per 100. | 31% means $\frac{31}{100}$ |
| 2. Finding 10% | To find 10%, divide by 10 | 10% of £36 = 36÷10=£3.60 |
| 3. Finding 1% | To find 1%, divide by 100 | 1% of £8 = 8÷100 = £0.08 |
| 4. Percentage Change | $\frac{Difference}{Original} \times 100\%$ | A games console is bought for £200 and sold for £250.<br>% change = $\frac{50}{200} \times 100 = 25\%$ |
| 5. Fractions to Decimals | Divide the numerator by the denominator using the bus stop method. | $\frac{3}{8} = 3 \div 8 = 0.375$ |
| 6. Decimals to Fractions | Write as a fraction over 10, 100 or 1000 and simplify. | $0.36 = \frac{36}{100} = \frac{9}{25}$ |
| 7. Percentages to Decimals | Divide by 100 | $8\% = 8 \div 100 = 0.08$ |
| 8. Decimals to Percentages | Multiply by 100 | $0.4 = 0.4 \times 100\% = 40\%$ |
| 9. Fractions to Percentages | Percentage is just a fraction out of 100. Make the denominator 100 using equivalent fractions.<br>When the denominator doesn't go in to 100, use a calculator and multiply the fraction by 100. | $\frac{3}{25} = \frac{12}{100} = 12\%$<br>$\frac{9}{17} \times 100 = 52.9\%$ |
| 10. Percentages to Fractions | Percentage is just a fraction out of 100.<br>Write the percentage over 100 and simplify. | $14\% = \frac{14}{100} = \frac{7}{50}$ |

Please use QR codes to support knowledge.

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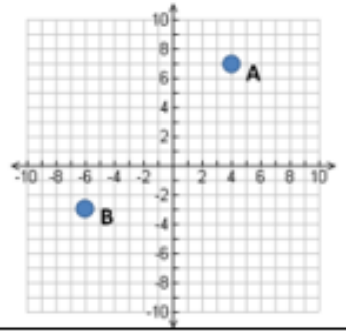
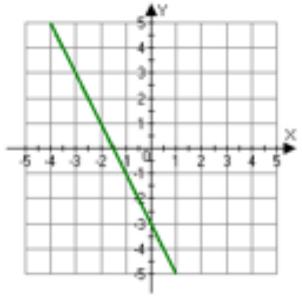
| Topic/Skill | Definition/Tips | Example |
|---|---|---|
| 1. Coordinates | Written in **pairs**. The **first** term is the **x-coordinate** (movement **across**). The **second** term is the **y-coordinate** (movement **up or down**) |   A: (4,7) B: (-6,-3) |
| 2. Midpoint of a Line | Method 1: **add the x coordinates and divide by 2, add the y coordinates and divide by 2**<br><br>Method 2: Sketch the line and find the values half way between the two x and two y values. | Find the midpoint between (2,1) and (6,9)<br><br>$\frac{2+6}{2} = 4$ and $\frac{1+9}{2} = 5$<br><br>So, the midpoint is (4,5) |
| 3. Linear Graph | **Straight line** graph.<br><br>The general equation of a linear graph is<br>$y = mx + c$<br><br>where $m$ **is the gradient** and $c$ **is the y-intercept.**<br><br>The **equation** of a linear graph can contain an **x-term**, a **y-term** and a **number**. | Example:<br>  <br>Other examples:<br>$x = y$<br>$y = 4$<br>$x = -2$<br>$y = 2x - 7$<br>$y + x = 10$<br>$2y - 4x = 12$ |
| 4. Plotting Linear Graphs | Method 1: **Table of Values**<br>Construct a table of values to calculate coordinates. | |

| x | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| y= x +3 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Please use QR codes to support knowledge.

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# Year 7 RS: Why is Christianity the way it is?

| Key words | |
|---|---|
| Prayer | Communicating with God. |
| Meditation | To think quietly, connecting the mind and soul with the divine. |
| Hymns | A religious song that gives praise and worship to God. |
| Psalms | A book in the Old Testament that contains songs of praise and worship. |
| Bible | The holy book for Christians. It has 66 books split into 2 sections. The Old Testament has 39 books and the New Testament has 27 books. |
| Mary | The mother of Jesus. |
| Resurrection | The belief that Jesus rose from the dead after he was crucified. |
| Sin | Going against the laws of God. |
| Mercy | Showing compassion or kindness. |

There are many different kinds of prayer, including:

- Adoration – praising God for his greatness and admitting dependence on him
- Confession – owning up to sin and asking for God's mercy and forgiveness
- Thanksgiving – thanking God for his many blessings, e.g. health or children
- Petition – asking God for something, e.g. healing, courage or wisdom
- Intercession – asking God to help others who need it, e.g. the sick, poor, those suffering in war

## What do Christians believe?

Christianity is focused on the life and teachings of **Jesus Christ**, who Christians believe to be the Son of God. Jesus was born in **Bethlehem** in the Middle East over 2,000 years ago.

Christians believe there is only one God, but that he is revealed in three different forms:

- God the Father
- God the Son
- The Holy Spirit

Christians model themselves on the life and teachings of Jesus Christ. Jesus taught people to love God and love their neighbour. Christians believe that God sent Jesus to live as a human being in order to save humanity from the consequences of its sins – the bad things humanity had chosen to do which had separated them from God. Christians believe that through the death and resurrection of Jesus this broken relationship with God is restored.

The Christian holy book is the **Bible**. It is divided into the **Old and New Testaments**.

The New Testament explains how God sent his only son, Jesus Christ, to restore the broken relationship between people and God which had been caused by human wrong-doing.

Activity:

Use your network of family to find out the answers to these questions. You might be able to make contact with some churches over the internet. A good place to start is https://www.achurchnearyou.com/

How are different Christian churches responding to the corona virus outbreak? How are Christians mutually supporting each other?

What does it mean to be a Christian in the 21st Century?

Different Christian denominations worship in different ways:

- Anglicans, Roman Catholics and Orthodox Christians have a set form of worship. It is a formal ritual based around the sacraments, particularly Holy Communion. This type of worship is called liturgical worship.
- Other Christian churches practise non-liturgical worship, e.g. Baptists and Quakers. This kind of worship has no set form and often does not involve Holy Communion. It is usually centred on Bible readings, a sermon, music and prayers. It can be structured or unstructured and spontaneous.

Whatever style of worship is used, most Christians believe it is important to come together to share acts of devotion and honour to God.

Public worship helps Christians to achieve a deeper understanding of the Bible, the life of Jesus and Christian teachings. It also enables those who receive Holy Communion to welcome Jesus into their hearts.

**Where do Christians worship?**

Many Christians worship in churches. Some groups meet in homes and other buildings. 'Church' means the gathering of Christians as well as the building in which Christians worship. Their leaders are called priests or ministers.

Many churches hold a service called **Communion**, **Eucharist** or **Mass**, in which bread and wine are shared together, just as Jesus did with his followers before his death.

Worship is about giving worth to something. Christians worship God in order to thank him for his love, ask for forgiveness for their sins and to try to understand what God wants from them

Worship is an essential part of a Christian's faith. Christians worship God to thank him for his love, ask for forgiveness for their sins and try to understand his 'will' for them.

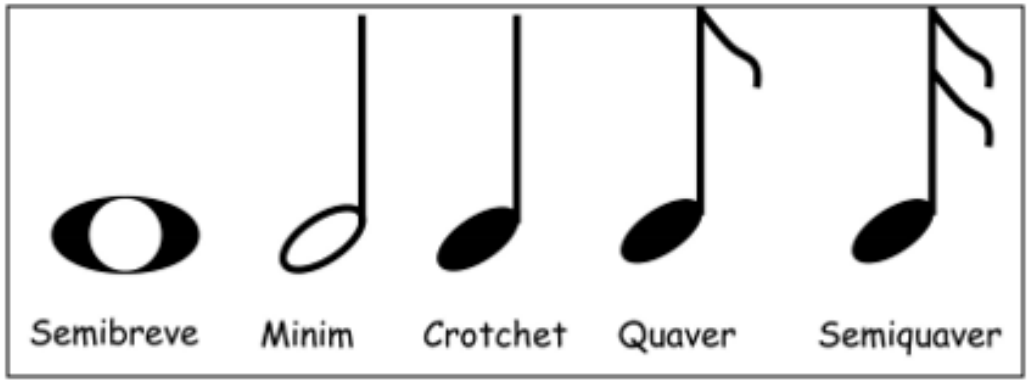
Public worship with other Christians usually takes place in a **church**, **chapel** or **cathedral**. The word 'church' can mean different things:

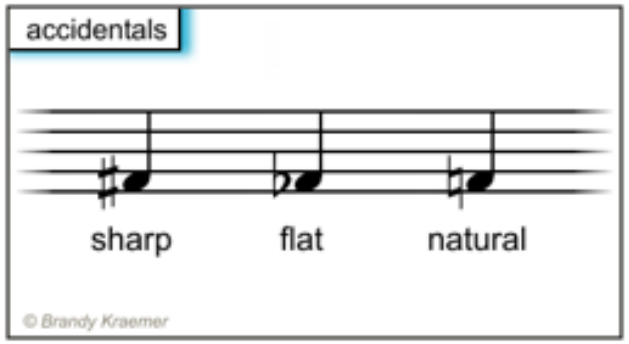
- 'The' **church** is the whole community of Christians, the people of God, also called the 'body of Christ'.
- 'A' **church** is a building in which worship takes place.

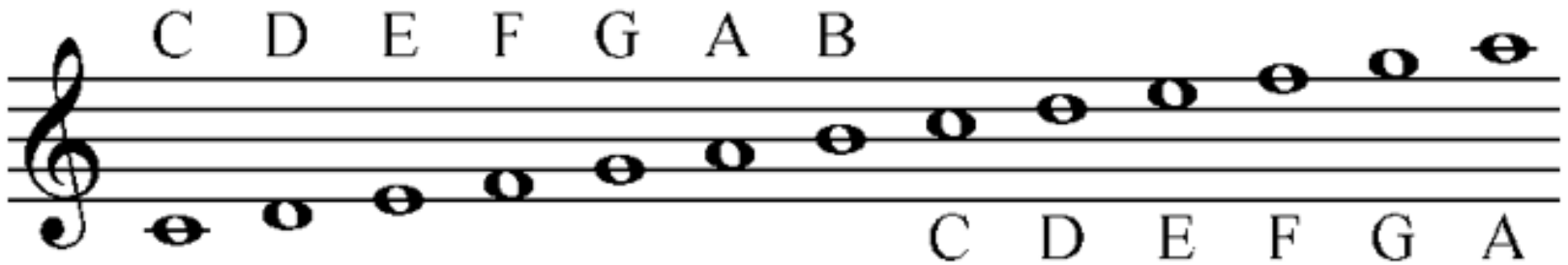
Private worship gives Christians a chance to spend time alone with God. Prayer, meditation, Bible study and singing hymns may all be done at home. Christians can unite themselves with the Church of God as they pray while not actually going to a physical church. Some Christians belong to the 'house church' movement and meet for worship in each other's homes.

# Year 7 Knowledge Organiser Music

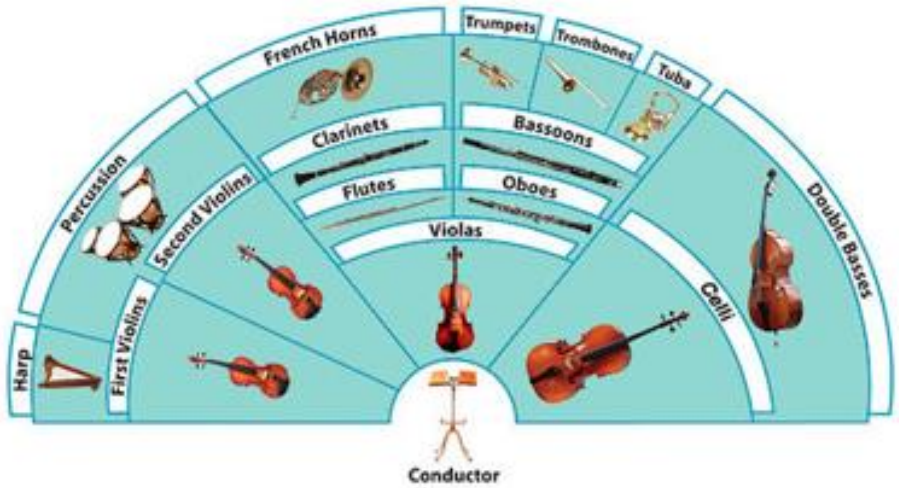
| | |
|---|---|
| **Duration** | How long a note lasts for |
| **Pitch** | How high or low a note is |
| **Tempo** | How fast or slow a note is |
| **Dynamics** | How loud or quiet the music is |
| **Timbre** | The quality of sound |
| **Texture** | How thick or thin the music is |
| **Structure** | How the sections of music are laid out e.g. chorus, verse etc. |
| **Silence** | When the instruments stop playing |



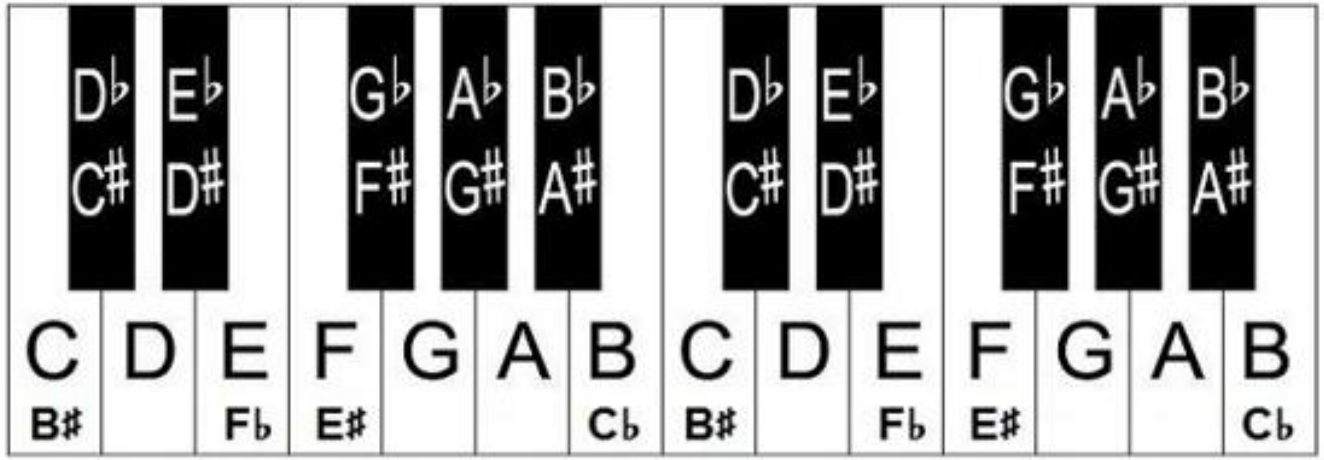



# Year 7 Knowledge Organiser Music




| | |
|---|---|
| **Strings** | Violin, Viola, Cello, Double Bass, Guitar, Harp, Ukulele, Banjo |
| **Brass** | Trumpet, Trombone, Tuba, Cornet, French Horn, Euphonium, Sousaphone |
| **Woodwind** | Flute, Piccolo, Clarinet, Oboe, Bassoon, Recorder, Saxophone |
| **Percussion** | Drums, Timpani, Cymbals, Djembes, Cajons, Xylophone, Glockenspiel, Maracas, Claves, Snare Drum, Bass Drum |



## African Drumming

Djembe

Talking Drum

- ✓ Polyrhythms – multiple simultaneous rhythms
- ✓ Tone and Bass – different timbres on a drum
- ✓ Improvisation – making music without preparation
- ✓ Ostinato – a musical pattern that repeats

Marimba

Shaker

## Fanfares

- ✓ Fanfares are usually played by brass (trumpet, trombone, tuba, cornet, French horn) and percussion (bass drum, snare drum) instruments because they are the loudest
- ✓ Fanfares are musical introductions to important events like a royal entrance, a sports game or even the beginning of a film!
- ✓ Fanfares use the notes of a major triad (3 or 4 in total) and use a variety of different rhythms
- ✓ The time signature is always in 4/4

## British Folk Music

- ✓ British folk music began in medieval times but is still played today having been passed through generations
- ✓ The music is usually inspired by nature and is played at social events like weddings and parties
- ✓ Songs are played at a fast tempo and use instruments like violin, accordion, drums and flutes
- ✓ Songs use melody and accompaniment i.e. there is a main tune but there are chords underneath to support the tune
- ✓ They can also use key signature changes which involve sharps, flats and natural notes

# Going the extra mile activities.
## Here are some great ideas to do with family to avoid boredom that go above and beyond during the next half term.

| The Arts | IT | DT | English and Drama | Humanities | PE | Maths | Science |
|---|---|---|---|---|---|---|---|
| Create a realistic drawing of an apple. Create a tonal grid, show correct shape and proportion. Include a cast shadow. | Create an online resource that helps an elderly person get on line and use social applications for the first time. | Research what the difference between hard and soft woods is. What trees grow them and what do carpenters use them for? | Watch one of the briefings by the government. What makes a good information giving speech? | How is living in Norfolk special? Compare your lifestyle with others in Lima, Kazakhstan and Calcutta. | Invent a new sport. | What are the first 10 Fibonacci numbers? | What is potable water? |
| Build a puppet theatre using cardboard and sock puppets/characters stuck on to pencils. Record a play to share with family. | Now give them advice on social media conventions, use of gifs and emojis.<br><br>Make it amusing and try it out! | How can you save money shopping for food (under normal circumstances)? Create a handy guide for a novice shopper. | Create a hero. What are the characteristics? Are they real? What stories would we find your hero in? It might be great to find a real one in your family! | England was divided up into 7 Saxon kingdoms. Create a podcast describing what life would have been like at this time if you had lived then. | Create a set of rules. | What is the golden ratio? This calls for a song. Can you create a song about the golden ratio? | How can we use ultrasound to monitor pregnancies? |
| Research the legend of St George and the Dragon. Look at the art work. Create a piece of performance art. | Coding: Send a message using the following; sign language, ASCII, semaphore, and programme Python Turtle to draw it | Can you make a model of a Norwich landmark? Use any material to hand. | Write a newspaper article about a spy e.g. James Bond. Try to write their obituary. | What happened to the Colony of Roanoke? Create a presentation to explain as an archaeologist what would you expect to find and where. | Get family members to play. | Make some mathematical art using materials at home like packets and boxes. | If you have the materials to spare try to do an experiment. Write it up explaining what you found out. |
| Choose 3 songs. Learn to sing them. What do the words mean to you? | Get a family member learning a language using Memrise or Quizlet. | Invent a new recipe and test it. | Watch a film. Be a film critic. You are being interviewed to review the film on radio 1. What would you say? | Imagine how Europe's history would have been different if there had been no monarchy. Write a new constitution. | Send it to the organisers of the Quarantine Olympics to include it in the next games! | What is Pascal's triangle? | Find out how alcohol effects young people. |