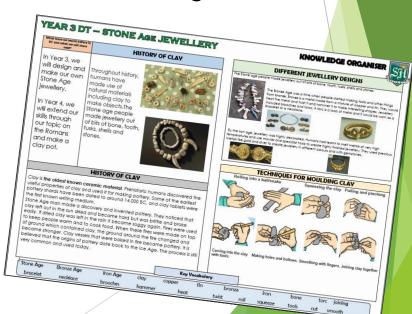
Year 3 Knowledge Organisers



At South Hill, we have created 'Knowledge Organisers' to help pupils and parents to know what the children will be learning in each of our Foundation subjects. These contain essential vocabulary and facts for each topic.

Please see 'Knowledge Organisers' attached for Year 3 for the autumn term, which will also be in pupil's books and on working walls in school.





YEAR 3 SCIENCE — ROCKS, FOSSILS AND SOIL

KNOWLEDGE ORGANISER

What have we learnt in this topic before and what we will learn this year?

In Year 1 and 2, we learnt in our topic: Everyday materials (Materials for different uses)

 To identify and name everyday materials including wood, plastic, glass, wood, metal, water and rock and to describe simple physical properties. We also grouped materials based on these properties.

In Year 3, we will learn:

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter

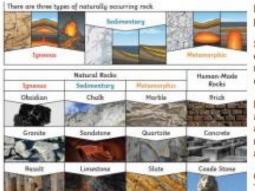
In Year 5, we will develop this further and learn about comparing and grouping materials by looking at properties such as hardness and solubility.

HOW IS SOIL FORMED?

Soil is a mixture of tiny particles of rock, dead plants and animals, air and water. Different soils have different properties depending on their composition.

- Sandy soil is pale coloured and has large particles. These create lots of small air gaps. Water drains through them easily so it usually feels dry.
- Clay soil is usually sticky and has small particles. They contain very few air gaps and water does not drain through it easily.
- Chalky soil is a light brown soil.
 Water drains through it quickly.
- Peat does not contain any rock particles. It's made from very old decayed plants and is dark, crumbly and rich in nutrients.

COMPARING AND GROUPING ROCKS



Different types of rocks have different properties.

Some rocks are harder than others. For example, granite is a very hard rock. This makes it a good material for building as it doesn't wear away easily.

Marble is another hard rock. It has an attractive texture and colour and it can be cut and polished. Because of this, it is used to make floor tiles and wall tiles. Some statues are made from marble too.

Chalk is a soft rock and wears away easily. This makes it ideal for making chalk sticks to write on blackboards.

FOCUS SCIENTIST - MARY ANNING - FOSSILS

Mary Anning was born in 1799 to a very poor family and lived on the Jurassic Coast in Dorset. Her father used to take her and her brother to look for stones and fossils on the beach. It was here that she found fossils that she would sell to make money for her and her brother after their father also died.]



Anning was the first person to find a complete fossil of a Plesiosaurus. She also pioneered the study of fossilised poo!

HOW ARE FOSSILS FORMED?

A fossil is the preserved remains or traces of a dead organism. The process by which a fossil is formed is called fossilisation.

It's very rare for living things to become fossilised. Usually after most animals die their bodies just rot away and nothing is left behind. However, under certain special conditions, a fossil can form.

After an animal dies, the soft parts of its body decompose leaving the hard parts, like the skeleton, behind. This becomes buried by small particles of rock called sediment. As more layers of sediment build up on top, the sediment around the skeleton begins to compact and turn to rock. The bones then start to be dissolved by water seeping through the rock. Minerals in the water replace the bone, leaving a rock replica of the original bone called a fossil.



Changes in sex level take place over a long period. Take place, eventuelly the food becomes exposed.

1

Key Vocabulary

rock mineral fossil igneous metamorphic sedimentary sediment maama lava erosion impermeable durable organism density permeable decompose chalk marble granite

Year 3 SCIENCE — Forces and magnets

What have we learnt in this topic before and what we will learn this year?

In Year 2, we learnt in our topic 'Use of Every day materials' to:

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

In Year 3, we will learn in our topic 'Forces and Magnets' to:

- compare how things move on different surfaces
- notice that some forces need contact between two objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having two poles
- predict whether two magnets will attract or repel each other, depending on which poles are facing.

In Year 5, we will develop this further and learn in our topic 'Forces (Gravity, friction and machines) to:

- · explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

FORCES

A force can be a push or a pull. For example, when you push open a cloor you have to apply a force to the door. You also have to apply a force to pull open a drawer. Forces can make objects speed up, slow down, stop or start

You cannot see a force but often you can see what it does. When a force is exerted on an object, it can change the object's:

Speed, direction of movement and/or shape (for example, an elastic band gets longer if you pull it)

A force meter. also called a newton meter, is used to measure forces Forces can be contact forces. where objects. must touch each other to exert a force, Other forces are noncontact forces. where objects do



not have to touch each other. These include:

· Gravity, magnetism and forces due to static electricity

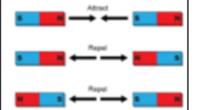
FOCUS SCIENTIST - JOHN DUNLOP - TYRES

John Boyd Dunlop was a Scottish vet and inventor. He is best known for his work in developing. one of the first pneumatic or inflatable tyres, a device still used today. He found that solid wood, rubber or iron wheels made cycling difficult on the bumpy and rough roads. He experimented by using an inflatable rubber tyre on his son's tricycle. In 1889, cyclist Willie Hume tested Dunlop's tyres by taking part in several races in the UK. He was the first member of the public to buy a bicycle with pneumatic tyres. Another Scot, Robert Thomson, also developed a pneumatic tyre about 40 years before Dunlop. Thomson had patented his invention in France in 1846 and in the US in 1847. Dunlop set up a company called 'Pneumatic Tyre and Booth's Cycle Agency'. In 1896, the company was sold to another UK company and was renamed 'Dunlop Rubber'. The company went on to make different types of carityres, as well as aeroplane tyres and golf balls and is still famous today.



KNOWLEDGE ORGANISER

TYPES OF MAGNETS

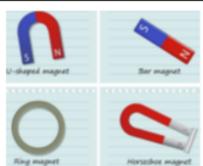


MAGNETS

Magnets are objects or materials that produce a magnetic field and attract or repel magnetic objects.

Magnets have 2 poles: north and south. If you put magnets towards each other:

- 1 south pole and 1 north pole will attract
- 1 south pole and another south pole
- 1 north pole and another north pole will repel



Magnets cannot pull or push anything made of wood, plastic and some other materials. Some metals are magnetic, but not all metals.

There are different types of magnets made for different purposes such as: U shaped magnet, Bar magnet, Ring magnet and Horseshoe magnet.

MAGNETIC AND NON MAGNETIC

Examples of magnetic materials	Examples of non-magnetic materials
Nickel knife	Wooden table
Cobalt coin	Plastic box
Steel spoon	Piece of paper
Iron naîl	Fabric T-shirt



Key Vocabulary

force friction pole north south object surface attract repel magnetic contact force non-contact force magnetic field

FRICTION

Friction is a force between two surfaces that are sliding, or trying to slide, across each other. For example, when you try to push a book along the floor, friction makes this difficult.

Friction always works in the direction opposite to the direction in which the object is moving, or trying to move. Friction always slows a moving object down.

The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced. Smooth, shiny surfaces produce less friction and therefore things travel across them more quickly.

YEAR 3 HISTORY - STONE AGE TO IRON AGE KNOWLEDGE ORGANISER

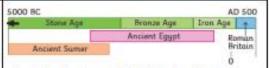
What have we learnt in this topic before and what we will learn this year?

In Year 1, we learnt about the Victorians and this topic takes us back even further in time to learn all about the 'Stone age to Iron age'.

In Year 4, we will learn about the Romans, who invaded Britain bringing the Iron Age to an end and bringing about Roman Britain.

Later in Year 5, we also learn about the Ancient Egyptians who existed a little before this and lasted for much longer.

THE TIMELINE



The Stone Age is named after the stone tools that the earliest humans used to help them survive. The Beaker People moved across and into Britain bringing with them bronze and tools and utensils made from this. This brought 'The Bronze Age' to Britain. The Iron Age was the last period of prehistoric Britain before the Romans arrived. People were making even more useful tools and learned to make them out of Iron.

12.000 BC













Stonehenge and Skara Brae



Stonehenge -

How and why was this built?



Shara Brae -

Why was it built like this? Where is this?

HOUSES

People in the Stone Age moved around from place to place with the seasons, in order to beep safe and warm, and to follow the animals they hunted. They

lived in caves or tents made from animal skins and wooden



During the Bronze Age and The Iron Age, people started to live in roundhouses. These could be very large and would have housed many people. One household

might have had two houses: one for living and one for cooking and making things.

- s. thick thatch h door c worth
- £ doub e. timber frame upright loave hearth (fire)
- legs for sitting or

In the Iron Age, these houses were sometimes rectangular and were often gathered in farming communities on hills. These were known as 'hillforts'.

Between 500 and 100 BC, many parts of Britain were dominated by hillforts. These settlements provided a home for hundreds. and later thousands, of people.



Diet

They were hunter gatherers and their main source of food was animals. They would eat all of the meat and then the marrow from the bones. Once they were in the Iron Age they had become more settled and started farming so this produce then became a source of food for them as well.











Clothing

The Stone Age people wore animal skins for clothes and would have sewn them. together using needles made from the animal bones. They wore animal bone and teeth as necklaces and bracelets for jewellery.





Iron Age people wore clothes made from dyed wool, using natural vegetable dyes. They wore trousers and tunics with a cloak over the top secured with a brooch.

Key Vocabulary

BC prehistoric AD iron bronze religious settlement hunter gatherer hillfort artefact archaeologist worship invaded source tunics bones

YEAR 3 GEOGRAPHY - MAP SKILLS

What have we learnt before in Geography and what we will learn next?

In Year 1, through the topic 'Where in the world do we live?' we learnt about where we live and began to use atlases and maps to identify countries and Cities in the UK.

In Year 2, in the topic 'Where in the world?' we looked at a map of the world and learnt about where different countries and continents are located in the world.

In Year 3, during the autumn term, we will start to develop our key map skills by looking at OS maps, keys, map symbols, grid references and compass directions.

In Year 6, we will further develop our map skills by looking at Ordnance Survey Maps in more detail.

What is a map?

A map is a symbolic representation of selected characteristics of a place, usually drawn on a flat surface. Maps present information about the world or place in a simple, visual way.

Mapmakers, called cartographers, create maps for many different purposes. Vacationers use road maps to plot routes for their trips. Meteorologists—scientists who study weather—use weather maps to prepare forecasts. City planners decide where to put hospitals and parks with the help of maps that show land features and how the land is currently being used.

Some common features of maps include scales, symbols, and grids.





4 Figure Grid References

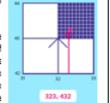


Some maps are crisscrossed with lots of horizontal and vertical lines. This creates lots of squares, known as a grid. Using the grid and squares helps to narrow the area to search – making it

easier to locate features on the map!

The numbers along the bottom of the map are called 'Eastings' the numbers along the side of the map are 'Northinas'. You read the Eastinas

first and the Northings second. A good way to remember this is to go along the corridor and up the stairs for example along to 33 and up to 43. This gives you the co-ordinates of the bottom left hand corner of the square you are looking at e.g. (33.43).



KNOWLEDGE ORGANISER

Map Symbols and Keys



To avoid maps becoming over-crowded with writing, symbols are often used to indicate certain places. The symbols have to be very simple so they are easy to understand and can be reproduced.

Here are simple map symbols used on ordnance survey maps.



Like a regular key, a key on a map helps us to unlock the information within the map.

Here is an example of a map and key:



Compass Points

A compass is a tool for finding direction. A simple compass is a magnetic needle mounted on a pivot, or short pin. The needle, which can spin freely, always points north. The pivot is attached to a compass card. The compass card is marked with the directions. To use a compass, a person lines up the needle with the marking for north. Then the person can figure out all the other directions.





The four main directions are North, East, South and West.
You can remember the 4 directions by remembering mnemonics such as Never Eat Stredded Wheat or Never

N
Eat Spacy Waffles.

There are 4 more direction points we increase the accuracy of following or giving directions.

The points between the main 4 points of direction are North East, South East.

South West and North West.

Key Vocabulary

Map Sketch map Symbols Scale Grid
East West North East North West

Key Ordnance Survey maps South East South West 4 f

ps Compass Directions 4 figure/ 6 figure grid references

s North Co-ordinates

South

YEAR 3 ART - PIRATE SHIP COLLAGE

What have we learnt before in Art and what we will learn next?

In Year 2, we practised our collage techniques when we made our Christmas cards and calendars. We practised using different types of materials and focused on repeating patterns.

In Year 3, we will be developing our collage skills in Autumn term in our Dirate Ship Collages, We will be using different media and working on building texture and detail in our work.

In Year 4, we will be drawing on our collage skills when we make our mosaic tiles. We will develop our current understanding by combining visual and tactile qualities.

In Year 6, we will look at collage again In our unit on landscapes. We will be focussing on the work of Beatriz Milhazes

COLLAGE

Collage is piece of art made by sticking different materials such as photos, clipping, materials etc. on to a backing. Collages tend not to be most accurate/ realistic interpretation of a subject. When looking at collage, you need to think about

- How it makes you feel
- What you think its shows
- What you can see
- Whether you think it has a message about anything
- What techniques have been used
- What materials and medium have been used

When looking at work by different artists, it can be useful to have a go at interpreting them yourselves. Comparing the work of different collage artists will help you develop a sense of what you appreciate and dislike in art. This may help you to

develop your own tastes and style.





Ben Lewis Giles

Pablo Picasso



Kurt Shwitters

FOCUS ARTISTS

Collage has been around for centuries but it began to become really noticed in the early 20th century. It was the artists George Braque and Pablo Picasso who first coined the phrase collage for this technique, which they used in their Cubist paintings. Both artists are well known for their love of the abstract style. It is not always clear what the subject of their work is and means it is often left up to the interpretation of the viewer.









Kev Vocabulary

Comparison

George Braque

Pablo Picasso

Sloops

Galloeons

DIRATE SHIPS

Pirate ships were always naval/ private ships that had been hijacked by pirates. This is why they were very elaborate. There were many different types. These included:



Sloops were the most common choice during Golden Age of Pirates during the 16th and 17th century for sailing around the Caribbean and crossing the Atlantic. These were commonly built in Caribbean and were easily adapted for pirate antics. The great advantage of the sloops were that they were quick and could attack swiftly and get away fast with a top speed of over 10 knots. Another advantage is that it could hide in shallower waters to escape warships because of its shallow draft.

KNOWLEDGE ORGANISER

Galleons

A Spanish design, the galleon combined the need to carry cargo and be able to defend itself at the same time with cannons. A galleon, could sustain a crew of over 200 with more than 70 canons and guns. However, its cumbersome manoeuvre and slow speed because of its large square sails made it fair game for pirates.



CREATING OUR COLLAGE

Let's get prepared for collage!

What will you need to explore collage?

iewspaper fagazines	ots of different papers
ift bags	iewspaper
	fagazines
Vrapping paper	Ift bags
and	Vrapping paper
	and

Sticky tape / stickers



Collages can be created by cutting, folding, ripping, scrunching and twisting. These are all techniques to build texture...

When creating a collage scene it is important to simplify the shape into blocks which you can build upon to add texture and detail using smaller pieces of material.





Collage Media Materials Interpretation Texture Cutting Folding Ripping Scrunching Twisting Overlapping Depth

YEAR 3 DT - STONE AGE JEWELLERY

What have we learnt before in DT and what we will learn next? In Year 3, we will design and make our own Stone Age iewellery. In Year 4, we will extend our

skills through

our topic on

the Romans and make a

clay pot.

made use of natural materials including clay to make objects.The Stone age people made jewellery out of bits of bone, tooth, tusks, shells and stones.

Throughout history,

humans have



HISTORY OF CLAY



HISTORY OF CLAY

Clay is the oldest known ceramic material. Prehistoric humans discovered the useful properties of clay and used it for making pottery. Some of the earliest pottery shards have been dated to around 14,000 BC, and clay tablets were the first known writing medium.

Stone Age man made a discovery and invented pottery. They noticed that clay left out in the sun dried and became hard but was brittle and broke easily. If dried clay was left in the rain it became soggy again. Fires were used to keep people warm and to cook food. When these fires were made on top of ground which contained clay, the ground ground the fire changed and became stronger. Clay vessels that were baked in fire became pottery. It is believed that the origins of pottery date back to the Ice Age. The process is still very common and used today.

KNOWLEDGE ORGANISER

DIFFERENT JEWELLERY DESIGNS

The Stone age people made jewellery out of bits of bone, tooth, tusks, shells and stones.



The Bronze Age was a time when people started making tools and other things from bronze. Bronze is a metal made from a mixture of copper and fin. They would heat the metal and twist it and hammer it to make interesting shapes. Jewellery included broaches and forcs. A forc is a loop of metal and it could be worn as a





By the iron age, jewellery was highly decorated. Humans had learnt to melt metals at very high. temperatures and use moulds and specialist tools to create highly finished jewellery. They used precious metals like gold and silver to create jewellery in different colours and with gemstones.





TECHNIQUES FOR MOULDING CLAY

Rolling into a ball/snake

Squeezing the clay Pulling and pinching

















with tools.

Carving into the clay Making holes and hollows. Smoothing with fingers, Joining clay together

Key Vocabulary

1	Stone Age	Bronze Age	Iron Age	clay	copper	tin	bro	nze	iron	bone	to	rc joining
ı	bracelet	necklace	brooches	hammer	heat		twist	roll	squeeze	tools	cut	smooth

Year 3 - Gymnastics Unit 1

Knowledge Organiser

Prior Learning

Developed body management. Used core strength to link elements. Attempted to use rhythm while performing a sequence.

We are learning...

- To show full extension during a balance
- 2. To move in and out of contrasting shapes with fluency
- 3. To perform a sequence using different types of rolls
- 4. To perform powerful jumps from low apparatus
- 5. To perform in unison with a partner
- 6. To create a group performance using contrasting actions

Assessment overview

Head - Identify similarities and differences in sequences.

Hand - Perform sequences with contrasting actions.

Heart - Explain why strength and flexibility are important in maintaining a healthy, active lifestyle.

Equipment

Mats, hoops, cones, wall bars, bean bags, low apparatus, ropes, action cards.

Vocabulary

Fluency, contrasting, unison, low, combinations, full turn, halfturn, flexibility, compositional ideas, healthy active lifestyle.

Unit Focus

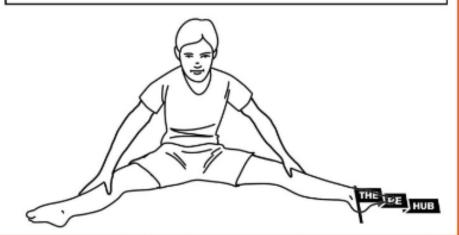
Modify actions independently using different pathways, directions and shapes. Consolidate and improve movements and gymnastics actions. Relate strength and flexibility to actions. To use basic compositional ideas.

Key Questions

- How do you perform a sequence in unison?
- 2. How can you adapt a sequence to include contrasting shapes?
- 3. Where are you showing strength in your sequence?

Concepts

Unison is the simultaneous performance by two or more people to complete a gymnastics action such as a roll at the same time or hold a balance.



Year 3 - Dance Unit 1

Knowledge Organiser

Prior Learning

Perform using more sophisticated formations as well as an individual. Use the stimuli to copy, repeat and create dance actions and motifs.

We are learning...

- 1. To perform a jazz square and use it in our dance
- 2. To perform a dance showing two contrasting characters
- 3. To develop movements using improvisation]
- 4. To use props in our dance sequence
- To use facial expressions to bring life and emotion to our dance
- To take on the role of director to help others improve their dance

Assessment overview

- Head Describe features of dances performed by others.
- Hand Competently include props and other ideas in their dance.
- Heart Share and create short dance phrases.

Equipment

Music player, music, cones, hoops, throw down spots, balloons, laptop internet access, chairs.

Vocabulary

Facial expression, improvisation, rehearse, director.

Unit Focus

Practise and put together a performance. Perform using facial expressions. Perform with a prop.

Key Questions

- Why are facial expressions important in dance?
- What actions might you perform when scared? (or happy or sad)
- 3. What other props might you have in dance?

Concepts

- Props are objects that dancers use to enhance their dance like chairs, fans, ribbons and swords.
- · Choreography is the act of designing a dance.

Miss Honey Mr Wormwood







COMPUTING SYSTEMS AND NETWORKS KNOWLEDGE ORGANISER



Overview









Digital Devices

- You should already know that <u>Technology</u> is something that has been made by people to help us.
- You should also know that <u>Information technology</u> (I.T.) includes <u>computers</u> and things that work with computers.
- Digital devices are things made for a particular purpose, that use <u>processing.</u>
- Digital devices have an input, process, and output (IPO).
- Information and data can be shared across <u>networks</u>.
 Many devices are used to create networks.

Networks and Network Devices

Connections and Networks

- In Computing, a connection describes a link between the computer and something else.
- -For example, a computer may be connected to the internet through wires, a mobile data system, or WiFi.
- A computer network is a set of connections that joins computers together.
- The computers in the network can send and receive information to one another.



Network Devices

- Network switch: a device that helps different devices on a network to be connected with each other.
- -Server: a computer that manages the network and stores files

Wireless access point (WAP): a device, connected to a wired network, that sends and receives wireless signals to and from devices.



Digital Devices - Input, Process Output (IPO)

A device is something that has been made for a particular <u>purpose</u> (it has a special use).
 Digital devices use <u>processing</u> (have a process) There is more than just an on-off function.
 Digital devices have an input, process, output (IPO)

Input: Something that sends a message to the device. E.g. You press a button on the keyboard.



Input Devices: Keyboard, joystick, mouse, web cam, microphone, touch screen, track ball, digital comera. Process: The device acts on the message. E.g. The computer follows a program that tells it what to do when the keyboard is pressed.



Output: Something that is sent out by the device. E.g. The letter that you have typed on the screen.



Output Devices: Screen/monitor, printer,

headphones, projector, speaker, smartboard.

Why Networks Are Useful

- Computer networks allow us to send and receive information between computers that are in different places.
- -Networks can help us to communicate quickly and easily.
- Networks can also join computers to shared devices, like scanners and printers.
- -The internet is a global network of computers. Imagine how different life would be without the internet!
- If information is shared on a network, it helps to reduce the risk of data being lost, e.g., if one computer breaks.



Important Vocabulary

Digital Input Process Output Connection Network Network Switch Server WAP E-Safety
Device

Year 3 Computing - Autumn 2



COMPUTING: DATA AND INFORMATION KNOWLEDGE ORGANISER



Overview

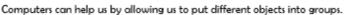
Branching Databases



- -Data is raw numbers and figures. Information is what we can understand from looking at data.
- -Objects can be <u>organised</u> into groups, based on what they are or their different attributes.
- -Branching databases can help us to identify objects within sets of data. They are useful when we want to classify objects (consider objects within a certain group).

Grouping and Separating

-Grouping: Objects can be put into different groups. These groups can be made up of objects that are the same, or objects that have the same attributes (features).



- -Yes or No Questions: Questions that require ves and no answers can be useful for helping us to find out the attributes of different objects. For example:
- -ls it big? (size)
- -ls it red? (colour)
- -ls it made of plastic? (material)
- -ls it heavy? (weight)



-Multiple Groups: Sometimes, we need to split objects into more than two groups. and so one yes or no question alone is not enough. For example, we may wish to classify animals into the different animal types (mammals, birds, reptiles, amphibians, fish, etc.). We may ask multiple ves or no questions, such as 'does it lav eggs?" 'does it have hair or fur?" etc.

Branching Databases

- -Branching Databases: A branching database (sometimes known as a binary tree) is a way of classifying a group of objects. If it has been designed correctly, a branching database can be used to help someone identify one of the objects.
- Creating Branching Databases: Programs such as j2data can help you to create branching databases. Firstly, you need to select which objects vou would like to use in your database. You can then type in 'yes' or 'no' questions to sort your objects. Add as many questions as needed until all of the objects are sorted individually.





Structuring Branching Databases

Remember that for your branching database to be effective, the strength of the questions that you ask is hugely important. Your questions need to separate different objects based on their attributes. E.g. the question 'does it have stripes?' would separate the animals below. You should also carefully consider the order that you ask auestions.

Presenting Information

Both pictograms and branching databases can be used in order to answer questions and solve problems.

-You should know which is best to use in different situations. E.g. a pictogram is best to show the favourite. colours of children in the class, whilst branching diagrams are best to identify different types of minibeasts.



Important Vocabulary

Information Data Attributes Group Database Present Branching Structure Multiple Classify