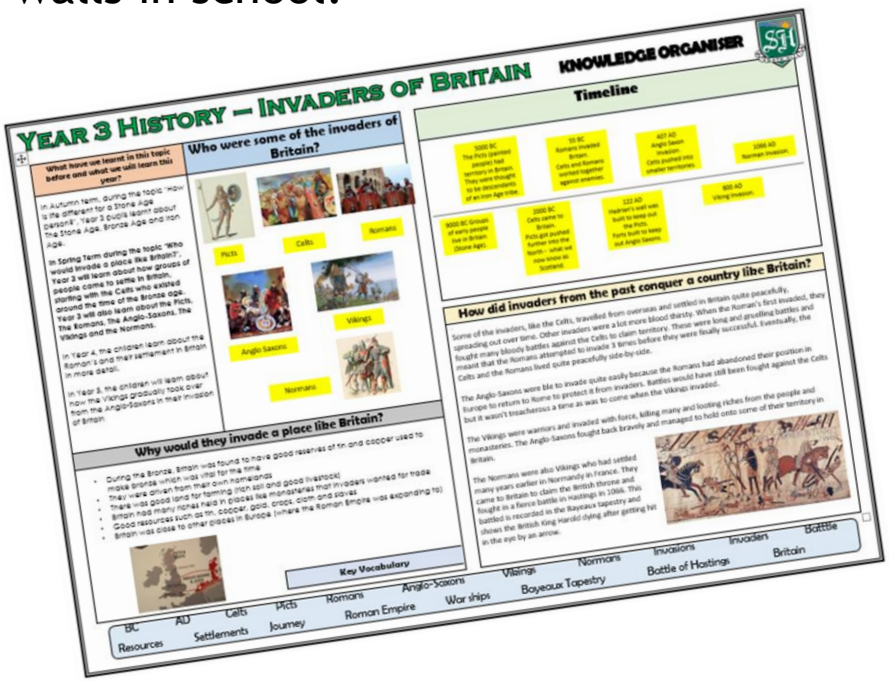
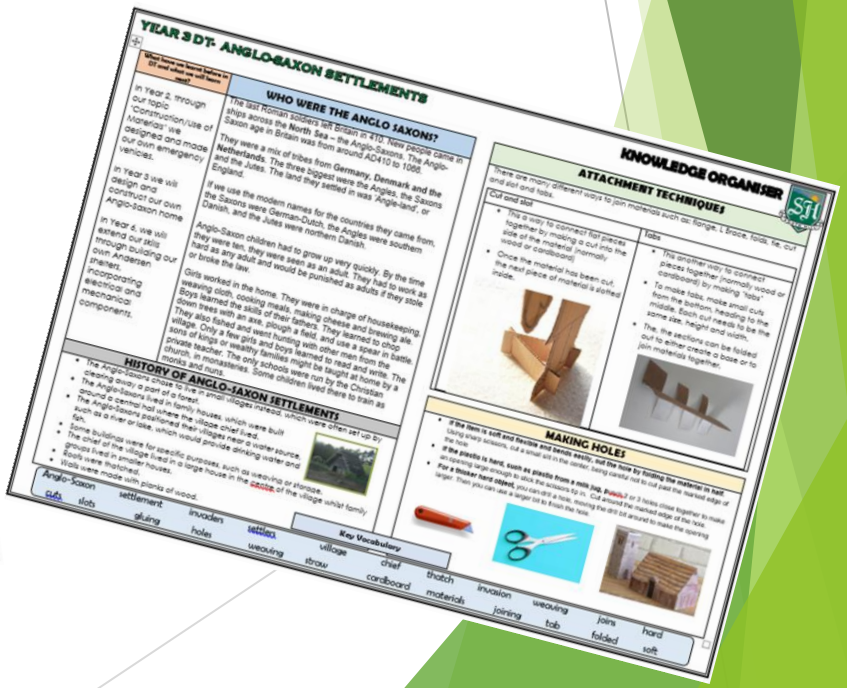
Year 3
Knowledge Organisers

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 Spring term, which will also be in pupil’s books and on working walls in school.





Year 3 Science - Spring 1 and 2

YEAR 3 SCIENCE – ANIMALS INCLUDING HUMANS

KNOWLEDGE ORGANISER

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

In year 2, we have already learnt in our topic: Animals Including Humans:

- to notice that animals, including humans, have offspring which grow into adults
- to find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

In Year 3, we will learn in our topic: Animals Including Humans:

- that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- to identify that humans and some other animals have skeletons and muscles for support, protection and movement.

In Year 4, we will learn in our topic: Animals Including Humans:

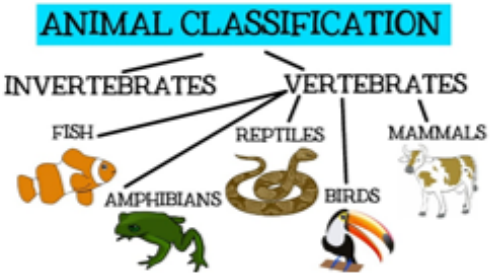
- to describe the simple functions of the basic parts of the digestive system in humans
- to identify the different types of teeth in humans and their simple functions
- to construct and interpret a variety of food chains, identifying producers, predators and prey.

OFFSPRING AND GROWTH

Animals can be **classified** as either **vertebrates** or **invertebrates.**

Vertebrates are animals that **have a backbone inside their body (endoskeleton).** The major vertebrate groups include **fish, amphibians, reptiles, birds and mammals.**

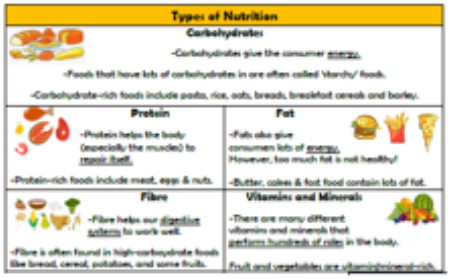
Invertebrates don't have a backbone. They either have a **soft body**, like worms and jellyfish, or a **hard outer casing covering their body (exoskeleton)**, like spiders and crabs.



BASIC NEEDS OF SURVIVAL

In order for a car to run it needs petrol. Petrol is **fuel for the car.** People are more complex than cars. For the human body to function, it needs many **different types of fuel** in the form of **food. The human body needs food for:**

- **Energy**
- **To keep warm**
- **For growth and repair.**

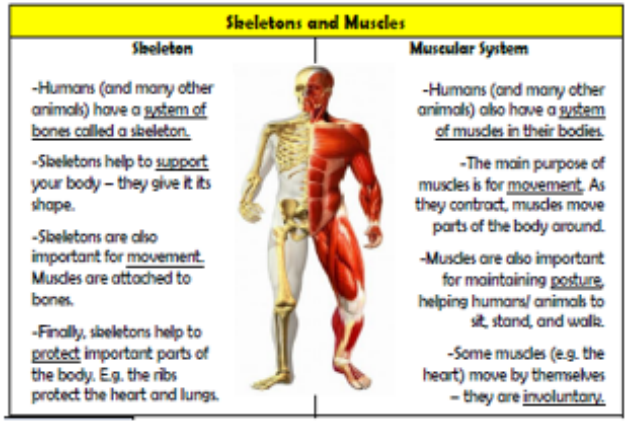


We need many **nutrients on a daily basis** in order to **stay healthy.** The **three main nutrient groups** in food are:

- Carbohydrates
- Protein
- Fats

We also need **minerals and vitamins.** A good balanced diet of fresh food helps to keep us healthy.

SKELETONS AND MUSCLES



FOCUS SCIENTISTS – Elsie Widdowson and Greg Whyte

Focus Scientists—Elsie Widdowson

Elsie Widdowson (1906-2000) was a British dietician and nutritionist who loved experiments. She wrote a book which told us for the first time what energy and nutrition was in different foods. She also played a key role in wartime rationing.

Greg Whyte OBE

Greg Whyte (born 1967) is a former Olympian and a sports scientist. He is a Professor in Applied Sport & Exercise Science at Liverpool John Moores University. He is an expert on exercise physiology, sports performance and rehabilitation. He has also been involved with Comic Relief.

Key Vocabulary

vertebrates invertebrates backbone skeleton muscle contract release nutrition carbohydrate protein fats endoskeleton exoskeleton

Year 3 History - Spring 1

Year 3 History – Invaders & Settlers

Knowledge Organiser

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

In Year 3, we will learn about some of the main groups, from the Picts through to the Normans, who invaded and settled in Britain. We will learn about how these groups conquered Britain and how this shaped and changed the country.

In Year 4, we will continue looking at the theme of 'invasion' by looking more in depth at 'The Roman Empire' and learning why the Romans were so successful and how they have helped shape Britain today.

In Year 5, we will further our understanding of invasion by revisiting and looking more in depth at how the Vikings invaded and took over from the Anglo Saxons.

Who were some of the invaders of Britain?

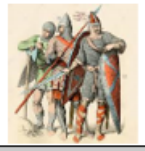
Picts

Celts

Romans

Anglo Saxons

Vikings



Normans

Why would they invade a place like Britain?

There are many reasons for groups to want to invade Britain:

- During the Bronze age, Britain was found to have good reserves of tin and copper used to make bronze which was vital for the time
- Groups were sometimes driven from their own homelands.
- There was good land for farming (rich soil and good livestock)
- Britain had many riches held in places like monasteries that invaders wanted for trade
- Good resources such as crops, cloth and slaves
- Britain was close to other places in Europe (where the Roman Empire was expanding to)

Timeline

- **5000 BC** – The Picts (painted people) had territory in Britain. They were thought to be descendants of an Iron Age tribe.
- **9000 BC** – Groups of early people live in Britain (Stone Age).
- **2000 BC** – Celts came to Britain. Picts got pushed further into the North - what we now know as Scotland.
- **55 BC** – Romans invaded Britain. Celts and Romans worked together against enemies.
- **122 AD** – Hadrian's wall was built to keep out the Picts. Forts built to keep out Anglo Saxons.
- **407 AD** – Anglo Saxon Invasion. Celts pushed into smaller territories.
- **800 AD** – Viking Invasion.
- **1066 AD** – Norman Invasion.

How did invaders from the past conquer a country like Britain?

Some of the invaders, like the Celts, travelled from overseas and settled in Britain quite peacefully, spreading out over time. Other invaders were a lot more blood thirsty!

THE ROMANS

When the Romans first invaded, they fought many bloody battles against the Celts to claim territory. These were long and gruelling battles and meant that the Romans attempted to invade 3 times before they were finally successful.

THE VIKINGS

The Vikings were warriors and invaded with force, killing many and looting riches from the people and monasteries. The Anglo-Saxons fought back bravely and managed to hold onto some of their territory in Britain.

THE ANGLO-SAXONS

The Anglo-Saxons were able to invade quite easily because the Romans had abandoned their position in Europe to return to Rome to protect it from invaders. Battles would have still been fought against the Celts not as fiercely as when the Vikings came.

THE NORMANS

The Normans were also Vikings who had settled many years earlier in Normandy in France. They came to Britain to claim the British throne and fought in a fierce battle in Hastings in 1066. This battled is recorded in the Bayeaux tapestry.

Key Vocabulary

BC, AD, Celts, Picts, Romans, Anglo-Saxons, Vikings, Normans, invasions, invaders, batttle, resources, settlements, journey, Roman Empire, war ships, Bayeaux Tapestry, Battle of Hastings, Britain

Year 3 Geography - Spring 2

YEAR 3 GEOGRAPHY – EARTHQUAKES AND VOLCANOES KNOWLEDGE ORGANISER

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

In Year 1, through the topic 'Wherever the weather', we learnt about weather and how people have to adapt to it in the clothes they wear.

In Year 2, in the topic 'Where in the world?' we look at different weather around the world we look out how the weather varies across different continents in the world.

In Year 3, during the Spring term, we will start to look at more extreme weather and the impact this has on the humans that live there.

In Year 6, we will look at different Biomes and how the weather changes across them.

How are Volcanoes Made?

Volcanoes are made when pressure builds up inside the earth. This affects the earth's crust causing magma (molten rock) to sometimes erupt through it. When the magma cools it hardens into solid rock which gives a volcano the mountainous shape.

- Active volcanoes have erupted in the last 10 000 years.
- Dormant volcanoes haven't erupted in the last 10 000 years but may erupt again.
- Extinct volcanoes aren't expected to erupt again.

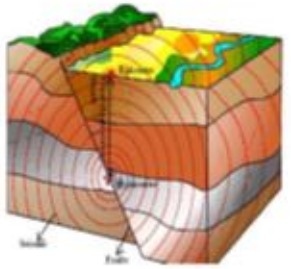
How does Extreme Weather Affect Humans?

Earthquakes can cause lots of damage to roads, buildings and property which can mean people have to leave their homes for a while or even forever as whole towns can be destroyed. This has a massive impact on people who live in areas prone to earthquakes - physically, emotionally and financially. They are also responsible for many deaths around the world each year.

Volcanoes can also affect humans tragically, meaning they have to leave their homes or are even killed by eruptions. Poisonous gases are often released in eruptions which can have devastating consequences for people's health. Approximately 350 million people live within "danger range" of an active volcano.

How do Earthquakes Happen?

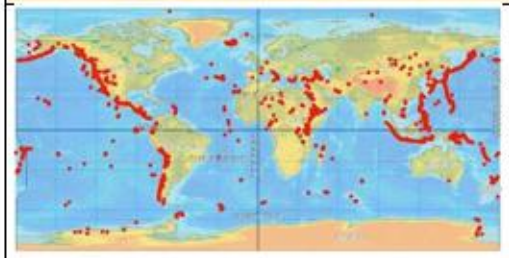
The earth is divided into tectonic plates. Earthquakes are caused when the earth's tectonic plates suddenly move. They may rub alongside each other for a long time until pressure forces them to jolt apart, causing massive tremors (violet shaking of the ground) which can cause great destruction.



Earthquakes can cause huge waves in the ocean called tsunamis.
Scientists use seismic waves to measure how big an earthquake is. They use a device called a seismograph to measure the size of the waves. The size of the waves is called the magnitude. The magnitude is measured using the Richter Scale.

The largest earthquake ever recorded in the world was in Chile in 1960. It measured a 9.6 on the Richter Scale.

Where are Some of the World's Most Famous Volcanoes?



The red dots show some of the world's active volcanoes.

The world's largest active volcano is Mauna Loa in Hawaii. Standing a whopping 4,169m tall, this geological giant last erupted in 1984.

In A.D. 79, the Italian town of Pompeii was destroyed and buried by a volcano called Mount Vesuvius. Incredibly, the ash deposits preserved the town and the remains of the people within it. Today, it's one of Italy's most popular historical sites!

Mount St Helens in the USA and Krakatoa in Indonesia are also famous volcanoes.

Key Vocabulary

Volcano, Earth's crust, Magma, Active, Dormant, Extinct, Earthquakes, Tectonic plates, Tremors, Tsunamis, Seismograph, Magnitude, Richter Scale, Ash, Mauna Loa, Mount Vesuvius, Mount St Helens, Krakatoa

Year 3 DT - Spring 1

YEAR 3 DT- ANGLO-SAXON SETTLEMENTS

KNOWLEDGE ORGANISER

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

In Year 2, we learnt about shell structures by constructing our own moving emergency vehicle using bold colours. We learnt how to attach axles and wheels and reinforced the chassis to make it strong.

In Year 3, we will revise our knowledge of Freestanding structures. We will design and construct our own Anglo-Saxon village using different types of joins and learn how to make holes.

In Year 4, we will learn about Frame structures and we will build a stand to make a 'Panathenaeic stadium' using frames, concertinas and triangles to reinforce the structure.

HISTORY OF ANGLO-SAXON SETTLEMENTS

- The Anglo-Saxons chose to live in small villages which were often set up by clearing away a part of a forest.
- The Anglo-Saxons lived in family houses, which were built around a central hall where the Village Chief lived.
- The Anglo-Saxons positioned their villages near a water source, such as a river or lake, which would provide drinking water and fish.
- Some buildings were for specific purposes, such as weaving or storage.
- The Chief of the village lived in a large house in the centre of the village whilst family groups lived in smaller houses.
- Roofs were thatched and walls were made with planks of wood.

REVISION OF FREESTANDING STRUCTURES

<u>Structures are things that are built for a purpose.</u>
Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables).

- Freestanding structures are structures that can stand up without being attached to something else.
- Freestanding structures need to <u>support</u> their own weight and also the weight of the things/people using them.
- So that they can do this, Freestanding structures need to be well-designed: strong, rigid and stable.

JOINING TECHNIQUES

There are many different ways to join materials such as using the following joining techniques: Flange, L Brace, folds, tie, cut and slot and tabs.

Cut and slot	Tabs
• This a way to connect flat pieces together by making a cut into the side of the material (normally wood or cardboard) • Once the material has been cut, the next piece of material is slotted inside.	• This another way to connect pieces together (normally wood or cardboard) by making "tabs" • To make tabs, make small cuts from the bottom, heading to the middle. Each cut needs to be the same size, height and width. • The, the sections can be folded out to either create a base or to join materials together.

MAKING HOLES

Holes can provide a way for us to create openings in models and products for a variety of purposes. This could be to create openings such as doors and windows. There are a number of ways to make holes, depending on whether the material is stiff or flexible.

- <u>Flexible materials:</u> Using sharp scissors, cut a small slit in the center, being careful not to cut past the marked edge of the hole
- <u>Rigid materials:</u> Punch 2 or 3 holes close together to make an opening large enough to stick the scissors tip in. Cut around the marked edge of the hole.

Key Vocabulary

Freestanding structure | rigid | stable | stand up | support | weight | joining techniques | cut and slot | tabs | reinforce | cut | slide | holes | soft | flexible | fold | scissors | opening | scissors | flexible | building | village

Year 3 Art - Spring 2

Year 3 Art – Watercolour Landscapes

Knowledge Organiser

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

In Year 2, we practised our painting and sketching skills by looking at the work of Andy Warhol and by drawing self-portraits.

In Year 3, we will focus on the artist 'Thomas Moran' and create our own watercolour landscape, depicting natural disasters. We will focus on creating textures and using a background wash.

In Year 4, we will further develop our sketching skills to show facial expressions and body language. We will use marks and lines to create texture and reflections, as well as learning to mix our own colours (including skin tones).

Thomas Moran

Thomas Moran (1837 – 1926) was an American print maker and painter. He was naturally artistic growing up and started his career as a wood engraver's apprentice. In his spare time, he started to enjoy painting watercolours. He then worked on illustrations for publications.

In 1862, he travelled to England and encountered the work of J.W. Turner who was famed for his watercolour landscapes. This inspired Moran to pursue his interest in watercolour painting, particular focusing on landscapes.

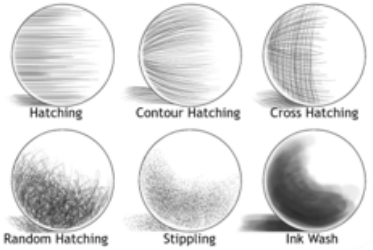
Background Wash

A **background wash** can be applied **before** you start building detail and texture onto your landscape. It will reflect the background **skyline** or **earth** of your **chosen landscape.**

It can be done by **mixing the colours** you require with **more water** than usual and **painting across** the sheet of paper. Remember not to make it too dark or your final detail may struggle to be seen when you start applying it.

Creating Textures

We can use a variety of techniques to create texture in our artwork.

Texture using watercolour	Texting using sketching
 Wet on Wet	 Hatching, Contour Hatching, Cross Hatching, Random Hatching, Stippling, Ink Wash
 Blending	
 Dry on Dry	

Mood Board

When working towards a **final piece**, a **mood board** can be used to **practise** and **develop ideas.**

These often include an **original picture** that inspired the piece and a rehearsal of **brush techniques, colour mixing** and **sketches** as well as the reason behind your choices. This gives an **intention** for the final piece.

They are **effectively** a practise of everything you will include in your final piece all dotted around on the page.

Key Vocabulary

Thomas Moran, watercolour, landscape, background wash, brush, water, mood board, mixing, texture, wet on wet, blending, dry on dry, hatching, stippling, ink wash, skyline, sketching

Year 3 PE - Spring 1

Year 3 - Dance Unit 2

Knowledge Organiser

Prior Learning

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

Unit Focus

Building stylistic qualities through repetition and applying movement to own bodies. Building basic creative choreography skills in travelling, dynamics and partner work.

We are learning...

1. to perform a dance phrase inspired by the ocean's depths.
2. to use improvisation to create a longer movement phrase.
3. to use dynamics in a short group dance to show travelling on the ocean.
4. to perform as a class to show the damage that can be caused to the ocean.
5. to work as a group to develop a dance representing the ocean.
6. to prepare our group dance for the final performance.

Key Questions

1. How can we use improvisation to show water in different states?
2. What do group dynamics bring to a dance?
3. What does the phrase 'opposing dynamics' mean?

Equipment

Music player, scarves (optional), floor markers.

Vocabulary

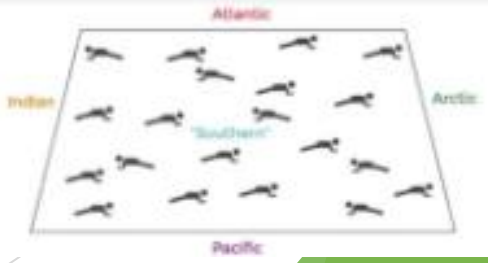
Solo, duo, categories, dynamics, phrases, timings, layers, harm, pollution, zones, ocean, sea, travel, improvise.

Concepts

- Exploring a theme or topic in depth to bring it to life through dance.
- How solo, paired and group work can be used to different effect.

Assessment Overview

Head - Contribute ideas to the structure of the dance.
Hand - Attempt to perform with a sense of dynamics.
Heart - Can decide with others which floor patterns /pathways to follow.



Year 3 PE - Spring 1

Year 3 - Netball

Knowledge Organiser

Prior Learning

Experienced different types of small-sided invasion games. Able to throw and catch in a variety of ways. Able to work with others in small teams.

Unit Focus

Perform basic netball skills such as passing and catching using recognised throws. Implement the basic rules of netball.

We are learning...

1. to perform quick, accurate chest passes.
2. to use dodging to get free from our opponent.
3. to catch a netball.
4. to use a bounce pass to feed a goal shooter.
5. to throw for distance using a shoulder pass.
6. to collect a loose ball.

Key Questions

1. When would we use a bounce pass?
2. How can we create space?
3. What is the 1m distance rule?
4. How does netball differ from other invasion games?

Equipment

Netballs, bibs, cones, hoops, netball posts (junior height if possible).

Vocabulary

Space, pass, accurately, mark, dodge, attack, defend, footwork, possession, shoot, rules, improve.

Rules

- If the ball goes off the court, a throw-in is taken by the team who didn't throw or knock the ball out of court.
- If a player breaks the rules, the umpire will give a pass or shot to the other team.

Assessment Overview

Head - Show an understanding of the role of a goal shooter.
Hand - Pass the ball in a variety of ways.
Heart - Create opportunities as a team to score.

Year 3 PE - Spring 2

Year 3 - OAA

Knowledge Organiser

Prior Learning

Taken part in a range of PE games and activities. Followed simple instructions and applied rules. Worked collaboratively as a pair and in a small group. Used and applied simple diagrams with pictures and symbols.

Unit Focus

Work with others to solve problems. Describe their work and use different strategies to solve problems. Lead others and be led. Differentiate between when a task is competitive and when it is collaborative.

We are learning...

1. to use clear communication, strength and flexibility to complete a task.
2. to work with others to complete map-reading tasks.
3. to draw and create a clear route on a map for others to follow.
4. to work with others and identify what went well and what we could do to improve.
5. to use the outside of the foot to control the ball and dribble.
6. to safely take part in trust-based activities.

Key Questions

1. What does trust mean?
2. How did you work together to decide on the layout of your station?
3. Do the symbols give us any clues as to what real-life object/area they might represent?

Equipment

Variety of ropes, hoops, bean bags, a range of sports equipment, teaching resource cards, soft balls, bibs/bands.

Vocabulary

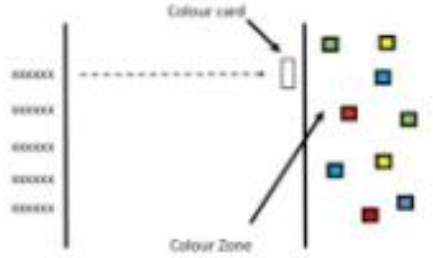
Maps, diagrams, scale, symbols, orienteering, controls, challenges, problem-solving, lead, follow, plan, trust.

Concepts

To problem solve, you need to think through possible problems before arriving at a solution. Children should take on the point of view of every team member.

Assessment Overview

Head - Use acquired skills to create maps and directions.
Hand - Perform with strength, stamina and endurance in more physical tasks.
Heart - Can work with others to solve problems.



Year 3 PE - Spring 2

Year 3 - Tennis

Knowledge Organiser

Prior Learning

They are able to make it difficult for their opponent to score a point. Begun to choose specific tactics. Transferred net/wall skills. Improved agility and coordination and use in a game.

Unit Focus

To identify and describe some rules of tennis. Serve to begin a game and explore forehand hitting.

We are learning...

1. to use the ready position to return a ball.
2. to hit the ball to different parts of the court using a forehand hit.
3. to perform an underarm serve to start a rally.
4. to move towards a ball to return it over the net.
5. to play cooperatively with a partner to keep the ball moving over the net.
6. to perform forehand hits to score points in a competition.

Key Questions

1. What is the role of an umpire?
2. What skills/techniques have you been using to score points against your opponent?
3. How did you try to improve your performance when playing different players?

Equipment

Tennis racquets, nets, sponge balls, tennis balls, cones, hoops.

Vocabulary

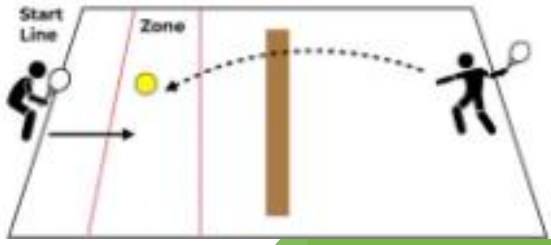
Hit, return, court, forehand, backhand, bounce, points, score, net, tactics, underarm, overarm.

Rules

- Play rules where if the ball is hit out of the playing area, the point is awarded to the other player.
- If the ball bounces more than once on your side, the opponent gets the point (you can adapt this to two bounces if necessary).

Assessment Overview

Head - Keep Count/score of a game.
Hand - Show tennis-ready position.
Heart - Play against an opponent.



Year 3 Computing - Spring 1

COMPUTING: CREATING MEDIA

Y3 KNOWLEDGE ORGANISER

Overview

Desktop Publishing

-Desktop publishing is when we create documents using page layout software.

-We can use desktop publishing to make things like newsletters, brochures, magazines and newspapers.

- Some examples of software that we can use for desktop publishing are Microsoft Publisher, Adobe Spark and Canva.

-When using desktop publishers, we consider how images and text are laid out the page in an eye-catching and appropriate format.

Layout of A Page

When desktop publishing, we consider how we can lay out a page in the most interesting, eye-catching, and appropriate ways, to suit our purpose and audience.

The title should be large, bold and clear. It is normally the largest text on the page.

Consider which font you will use – different fonts create different ideas and feelings.

What is the main story of the magazine? How can you sum the story up in a few words?

Think about how different colours make us think and feel.

Think about where you will put the date and price of the magazine – this is important information!

Magazines are normally in portrait orientation. Think about how you lay out text and images.

Text Tools

The toolbar is the set of icons and buttons that are at the top of the page in a desktop publisher. You should already know some of these from your earlier study:

These tools can change the text.

The B makes the text **Bold.**

The *I* writes the text in *Italics.*

The U underlines the text.

Clicking on this icon allows you to change the size of the text. After pressing the icon, you will see a list of numbers. The larger the number selected, the bigger your text will be.

Clicking on this icon allows you to change the font (style) of the text. Most desktop publishers have many styles to choose from.

Clicking on this icon opens the text colour tool. It allows you to change the colour of the text. There are often many colours to choose from.

The undo tool reverses the last thing that you did. If you make a mistake, the undo tool can help you to get it back to how it was.

Image and Layout Tools

Templates have a pre-arranged layout, colour scheme and style that you can adapt for your needs!

-The styles tool is a real time saver. You get to choose a number of different features, e.g. fonts and colours, and it will apply the rules to the whole document.

-Text boxes allow you to type text anywhere on the document. The box itself can be coloured. You can make the text box as large or small as you want, and rotate it using this symbol.

-This tool lets you insert pictures into your document. You can select pictures already on your computer, or search the internet for pictures. Pixabay contains lots of pictures that you can legally use in publications.

Important Vocabulary

Publishing | Text | Images | Font | Templates | Orientation | Placeholders | Software | Purpose | Audience

Year 3 Computing - Spring 2

V3

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 organised 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).

Computers can help us by allowing us to put different objects into groups.

-Yes or No Questions: Questions that require yes and no answers can be useful for helping us to find out the attributes of different objects. For example:

-Is it big? (size)
-Is it red? (colour)
-Is it made of plastic? (material)
-Is 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 yes or no questions, such as 'does it lay 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 you 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 questions.

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	Branching	Database	Multiple	Classify	Structure	Present