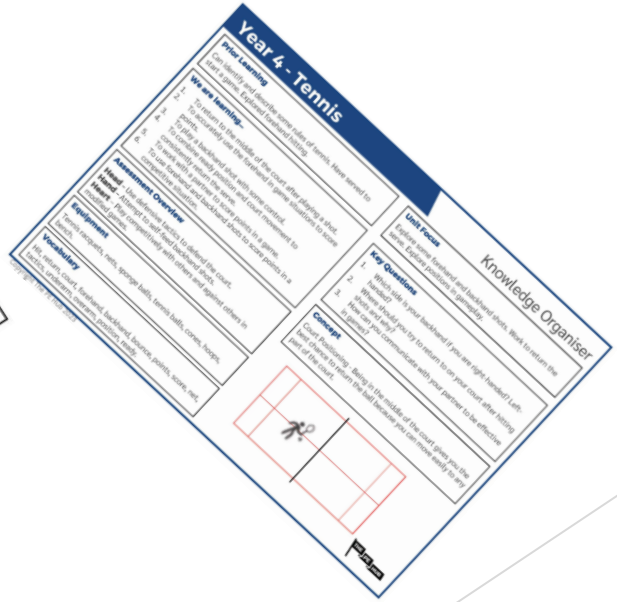
Year 2
Knowledge Organisers

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 4 for the autumn term, which will also be in pupil’s books and on working walls in school.



Year 2 Science - Spring 1

YEAR 2 SCIENCE – USES OF EVERYDAY MATERIALS KNOWLEDGE ORGANISER

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

In Year 1 we learnt in our topic -Everyday Materials

- to distinguish between an object and the material from which it is made
- to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- to describe the simple physical properties of a variety of everyday materials
- to compare and group together a variety of everyday materials on the basis of their simple physical properties

In Year 2 we will learn in our topic – Uses of everyday materials (materials for different uses)

- 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
- to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

In Year 4, we will develop this further in our topic - States of matter

- to compare and group materials together, according to whether they are solids, liquids or gases
- to observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).

This subject is developed further in Year 6.

PROPERTIES OF MATERIALS

All **materials** have **different properties** which make them good for **different jobs.**

Here are some properties of everyday materials:

USES OF EVERY DAY MATERIALS

Windows are made out of **glass.**
This is a good material to use as **glass** is:

- **transparent** so it lets light through.
- **hard** so it stops people or objects getting in
- **waterproof** so it keeps the rain out

Raincoats are made out of **plastic** covered **fabric.**

This is a good material to use as **plastic** is:

- **waterproof** so it keeps you dry in the rain

and **fabric** is:

- **flexible** so it can wrap around your body
- **soft** so it is comfortable to wear
- **warm**

Tea towels are made out of **fabric.**
This is a good material to use to dry dishes as it is:

- **absorbent** so it soaks up liquid

HOW THE SHAPES OF SOLID MATERIALS CAN BE CHANGED

Some solid materials can be changed by:

- **Stretching**
- **Squashing**
- **Twisting**
- **Bending**

It all depends on their properties.

FOCUS SCIENTIST – JOHN MCADAM – BUILDING ROADS

John McAdam was a **Scottish inventor** who was unhappy with the **conditions of roads** so decided to make them better. **He decided to grind up big stones and then cover them with a layer of smaller stones (gravel),** creating a hard road which was easier to ride on. It took him 30 years but he managed to **improve all the roads in the UK** and soon other countries followed his design for their roads. Later, people added **tar** on top. Tar is a sticky material when it is very hot but sets hard to make a **smooth, hard road.** This is called **'Tarmac'**. It is still used today.

Key Vocabulary

hard squashy smooth absorbent bumpy opaque dull brittle translucent rigid transparent soft flexible rock rough waterproof elastic shiny stretch squash twist bend wood metal plastic glass brick paper

Year 2 History - Spring 1

YEAR 2 HISTORY – GREAT FIRE OF LONDON

KNOWLEDGE ORGANISER

What knowledge have we learnt before, what we will learn this year and what will come after?

In Year 1, we learnt about what life was like for children in the 'Victorian era'. We learnt about the monarch of the time, Queen Victoria, and learn about the legacy of some Victorian traditions.

In Year 2, we will learn about the past by studying the 'Great Fire of London'. We will research how the fire started and spread and look at Samuel Pepys' diary. We will consider how fighting fires has changed and the impact the fire had on the City of London.

In Year 3, we will continue to expand our knowledge of periods of History by studying the Stone age to the Iron age. We will also learn about invaders as well as a topic on Queen Elizabeth II and the monarchy.

TIMELINE

'The Great Fire of London' happened one year after the 'Great Plague'. It started on 2nd September 1666 and lasted for 5 days. The fire starts at Thomas Farriner's bakery on Pudding lane, early Sunday morning.

Houses are pulled down in an attempt to stop the fire spreading, on Sunday evening.

By Monday evening, the fire spreads very close to the Tower of London.

On Tuesday, St Paul's cathedral is destroyed by the fire.

On Thursday 6th September 1666, the fire is finally under control.

SAMUEL PEPYS' DIARY

Samuel Pepys was born in London in 1633. He went to Cambridge University, and was a **Member of Parliament** (MP) and he worked for the **Royal Navy**. He lived through some of the biggest events of the time including the **Great Plague** (1665) and the **Great Fire of London** (1666). He started writing a **diary** and recorded all sorts of details, from the weather to what happened.

FIRE BRIGADE – PAST AND PRESENT

During the 'Great Fire of London'	Today
In 1666, there was no organised fire brigade. Firefighting was very basic. Leather buckets, axes and water squirts were used to fight the fire – but had little effect. Normal people, including the King tried to fight the fire by collecting water from the River Thames. Eventually, the navy used gunpowder to blow up houses and stop the fire spreading.	 Today, we have fire brigades and these were first established in London in 1866. Fire Brigades are based locally and have powerful engines as well as other vehicles to help in an emergency. Firefighters use high powered hoses to put out fires.

THE GREAT FIRE OF LONDON

- When and where did the fire start? The fire started on Sunday 2nd September 1666 in Thomas Farriner's bakery on Pudding Lane. It lasted for 5 days.
- Why did the fire spread so quickly? The weather was hot and it hadn't rained for months. Houses in London were mainly built from wood and straw. The houses were very close together, so fire could easily spread. Strong winds were blowing, which helped the flames to spread.
- How did people try to put the fire out? There was no fire brigade so ordinary people used leather buckets and water squirts to try to put the fire out but these did not work. Later in the week, King Charles II ordered buildings to be pulled down to stop the flames from spreading.
- How and when was the fire put out? By Thursday 6th September, the wind had died down so people were able to put out the flames by using water from the Thames.
- What happened after the fire? Many left London to live elsewhere and some slept in tents. An organised fire brigade was established and water engines were designed that gave a continuous stream of water when pumped.

Key Vocabulary

past | present | then | now | 'The Great Fire of London' | bakery | Pudding Lane | Thomas Farriner | Samuel Pepy | River Thames | 2nd September 1666 | five days | navy | gunpowder | houses | Fire engine | Fire Brigade

Year 2 History - Spring 2

YEAR 2 HISTORY – HISTORY MAKERS

KNOWLEDGE ORGANISER

What knowledge have we learnt before, what we will learn this year and what will come after?

In Year 1, learnt about History makers Neil Armstrong and Mae Jemison who are both famous for going to space. We researched their lives and thought about their legacy as well as considering what we want our own to be.

In Year 2, we will learn about History makers by studying the lives of Mary Seacole and Florence Nightingale. We will learn how they both helped people as nurses and consider the similarities and differences between them.

In Year 3, we will continue this by learning about the life and legacy of Queen Elizabeth II including visiting Windsor Castle to learn more about the monarchy.

HOSPITALS IN THE 1800'S

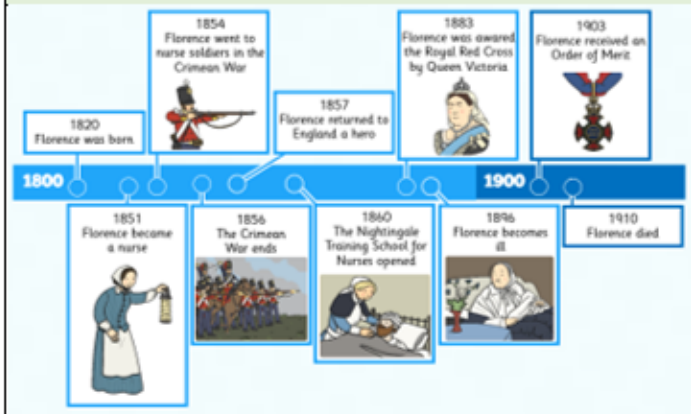
Hospitals, especially those where battles were taking place, were dirty, overcrowded and only men were allowed in. There were often rats and no-one cleaned. Many people died because of infections due to the poor conditions.

Florence Nightingale and Mary Seacole showed the world the importance of hygiene in hospitals and the benefits of nutritious food for patients. Now hospitals are clean and patients are well fed and looked after.

THE CRIMEAN WAR

The Crimean War was fought between 1853 and 1856 in the south of Russia at the time (now part of Ukraine). On one side were Britain, France, and Turkey and on the other side was Russia. Florence Nightingale and Mary Seacole went to the Crimea to take care of the soldiers. They introduced modern nursing practices and saved many lives.

TIMELINE – FLORENCE NIGHTINGALE



Florence had to go against doctors' orders to care for the sick in the hospital.

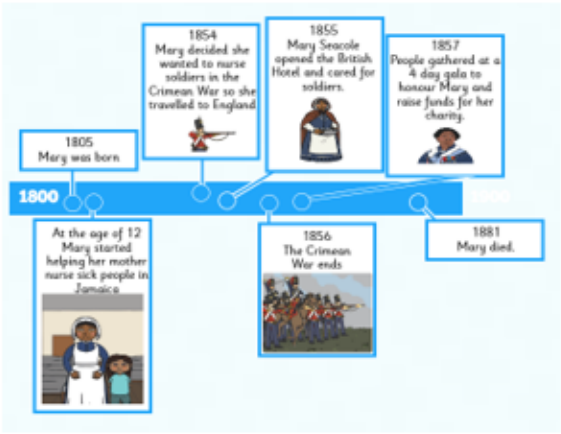
She cleaned the rooms, fed the soldiers and tended to their wounds.

She became known as the Lady with the Lamp because she visited the soldiers at night as well as during the day.

TIMELINE – MARY SEACOLE

Mary Seacole defied social expectations and fought against prejudice to save the lives of many soldiers during the Crimean War.

She was a brave lady who entered the battlefield to ensure soldiers from both sides received the treatment they needed. She was known as Mother Seacole.



Key Vocabulary

hospital	1800's	dirty	overcrowded	men	rats	conditions	Florence Nightingale	Mary Seacole	hygiene
nutrition	soldier	The Crimean War	Crimea	Russia	cleaned	wounds	Lady with the lamp	Mother Seacole	

Year 2 DT - Spring 1

YEAR 2 DT – EMERGENCY VEHICLES

KNOWLEDGE ORGANISER

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

In Year 1, we learnt about Freestanding structures using rigid materials to make and design a chair for a toy.

In Year 2, we will learn about shell structures by designing and making our own Emergency vehicles, with wheels and axels.

In Year 3, we will revise Freestanding structures by designing and constructing an Anglo-Saxon village.

SHELL STRUCTURES

Structures are things that are **built** for a **purpose**, for example to **support** something or **hold** something.

Shell Structures are structures with a **solid** outer surface (which may be curved or flat) and a **hollow** inner area.

Shell structures can serve many different purposes. Often, they are used to **protect** the things inside them.

-Some examples of shell structures are food packaging, tunnels, helmets, drinks cans, car chassis and boats.

TYPES OF EMERGENCY VEHICLES

Police car

Ambulance

Fire engine

Helicopter

Motorbike

BRIGHT AND BOLD COLOURS

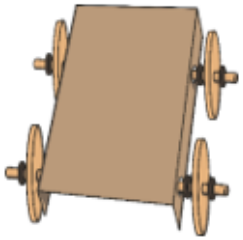
It is important for Emergency vehicles, that move at high speeds, to be easily **identifiable** and seen. Therefore, they are often **bold** or **reflective** colours.

Bold, bright colours

Dull, dark colours

TYPES OF AXLES AND ATTACHING THE AXLE

On a vehicle the axles need to be fixed on securely to ensure the wheels do not move from side to side. When making our own vehicle, wheels can be secured with a washer on either side. This limits the movement and helps the vehicle roll smoothly.



The axle needs to be attached to the chassis. A chassis is the frame upon which the rest of the vehicle is built. When attaching the wheels and axles to the chassis:

- One set of wheels (e.g. front wheels) will have a fixed axle and the wheels will stay in one direction
- One set of wheels (back wheels) will have a free axle which allows the wheels to move so they vehicle can change

Key Vocabulary

Shell structure	protect	outer	hollow	inside	design	construct	bright	bold	reflective	dull	dark
Police car	Helicopter	Ambulance	Fire Engine	Motorbike	axle	fixed axle	free axle	washer	chassis		

Year 2 Art - Spring 2

YEAR 2 ART – CLAY POTTERY FLOWERS

KNOWLEDGE ORGANISER

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

In Year 1, we studied the artist Georgia O'Keeffe and painted our own water colour flowers. We also made our own flower mandala using natural materials.

In Year 2, we will learn how to draw observational drawings of flowers. We will then work with clay, using different techniques to shape and mould it, to create a flower, inspired by the work of Owen Mann.

In Year 3, we will develop our skills in mouldable materials using paper mache to create a Venetian mask.

OBSERVATIONAL DRAWING

Observational drawing is drawing what you see in front of you as realistically and as true to life as possible. It can be a flower, a person, a still life or any object. When artists look at something with the intent of drawing it, they tend to look more carefully than usual seeing the shapes, patterns, colours, and shadows.

SHAPING CLAY

There are lots of different techniques you can use to shape clay.

You can:

- Roll, squeeze, pull, pinch and join pieces together

FOCUS ARTIST - OWEN MANN

Nature-loving, New York-based artist Owen Mann makes **plants** out of **clay**. Mann first developed his love for ceramic craft at **age 10**, when he made a **clay rose for his mother**. It occurred to him then that one day he could **construct ceramic florals** for a living and he taught himself the craft. However, it wasn't until he was in his mid-twenties that he threw himself into crafting full-time.

CLAY POTTERY FLOWERS

By shaping clay using various techniques, we can make flowers. This is called floramics.

- Roll the clay into a ball and then flatten the clay.
- Using a **clay knife**, draw and cut the shape of petals into the clay.
- Repeat with a smaller ball of clay.
- Score both pieces of play and layer on top of each other.
- Bend the petals upwards into a bowl shape and secure them together.

Key Vocabulary

observational drawing	see	in front of you	realistic	shape	pattern	clay	shape	roll	squeeze	
pull	pinch	join	ceramics	pottery	construct	flower	petals	floramics	ball	flatten

Year 2 PE - Spring 1

Year 2 – Gymnastics Unit 2

Knowledge Organiser

Prior Learning

Can describe and explain how performers can transition and link elements. Performed basic actions with control at different speeds and levels. Developed flexibility in a range of shapes and balances.

Unit Focus

Develop body management through a range of floor exercises. Use core strength to link recognised gymnastics elements. Attempt to use rhythm while performing a sequence.

We are learning...

1. to use a relevé walk in a sequence.
2. to perform a dish and arch shape moving smoothly from one to the other.
3. to develop our strength in back support and crab.
4. to frog jump and leap frog.
5. to hold an L-sit with a straight back.
6. to bring rhythm and flow to our sequence.

Key Questions

1. How would rhythm be shown in a sequence?
2. Is the transition smooth and continuous?
3. Say something you liked about someone else's performance.

Equipment

Mats, hoops, cones, bean bags, low apparatus, music player and music.

Vocabulary

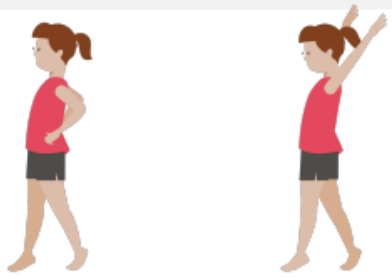
Body tension, carry, control, extension, fast, hang, timing, travel, turn, transition, smooth, relevé, core muscles.

Skill

Core muscles are like the superheroes of our body! They are a group of strong and important muscles that live in the middle part of our body. Imagine your core as a powerful team that works together to keep you stable, balanced, and able to do lots of fun activities!

Assessment Overview

Head - Work safely on own and with others in body management sequences.
Hand - Use core strength to link gymnastic elements, e.g., back support and L-sit.
Heart - Work with a partner to copy, create and join sequences.



Year 2 PE - Spring 1

Year 2 – Send and Return Unit 1

Knowledge Organiser

Prior Learning

Developed sending skills with a variety of balls. Tracked, intercepted and stopped a variety of objects. Selected and applied skills to beat the opposition.

Unit Focus

Be able to track the path of a ball over a net and move towards it. Begin to hit and return a ball with some consistency. Play modified net/wall games throwing, catching and sending over a net.

We are learning...

1. to stay on our toes to move quickly to the ball.
2. to identify which hand is dominant in a game.
3. the basic rules of serving to our partner.
4. to develop agility and use it in a game.
5. to use the correct grip to hit a self-fed ball.
6. to use the ready position in a rally.

Key Questions

1. How do you hold the racquet differently for the different types of hits?
2. What is a self-feed?
3. What is a boundary?
4. Why do you think we have boundaries?

Equipment

A variety of balls, a variety of bats/racquets, cones, hoops, targets, button cones, quoits, balloons, bench.

Vocabulary

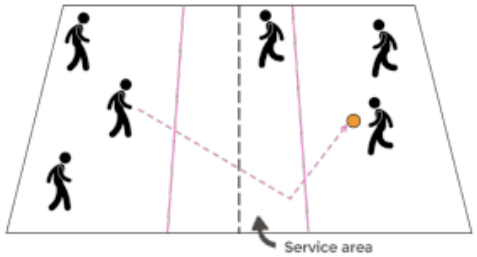
Serve, bounce, drop, badminton, tennis, volleyball, squash, shuttlecock, racquet.

Concept

- Children can either hit with a racquet or their hands.
- Children must not run onto others' courts to collect balls while they are in the middle of a point.

Assessment Overview

Head - Decide on and play with their dominant hand.
Hand - Take part in a rally.
Heart - Play in modified games with others to send and return a ball over a net/line.



Year 2 PE - Spring 2

Year 2 – Dance Unit 2

Knowledge Organiser

Prior Learning

Can describe and explain how performers can transition from shapes and balances. Challenged themselves to move imaginatively, responding to music. Worked as part of a group to create and perform.

Unit Focus

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 develop a dance that shows different emotions,
2. to dance with rhythm following a clockwork pattern.
3. to work on our own to create a short movement phrase.
4. to watch, copy and repeat actions to create a 'motif'.
5. to perform our motif in different formations.
6. to use different movement pathways in our dance.

Key Questions

1. What does entering stage mean?
2. What does 'freestyle' mean in dance?
3. What is a way to improve your dance? E.g., variety of movements, improving timing and rhythm etc.

Equipment

Music player, music, cones, hoops, throw down spots, laptop with internet access, resource cards.

Vocabulary

Dynamic, independent, pair, clock face, time, motif, freestyle, formation, on stage, off stage.

Concepts

- On and off stage, how to move into and out of performance space.
- Freestyle dance refers to the act of spontaneously creating movements with your body, which means you're not following choreography.

Assessment Overview

Head - Volunteer ideas as part of a group.
Hand - Perform with some expression.
Heart - Show engagement in tasks and perform with freedom.

Year 2 PE - Spring 2

Year 2 – Attack Defend Shoot Unit 2

Knowledge Organiser

Prior Learning

Can send a ball using feet and can receive a ball using feet. Refined ways to control bodies and used a range of equipment. Recalled and linked combinations of skills, e.g., dribbling and passing.

Unit Focus

Select and apply a small range of simple tactics. Recognise good qualities in self and others. Work with others to build basic attacking play.

We are learning...

1. to throw different types of equipment.
2. to move to space after passing the ball.
3. to pass and move forward to a target with a partner.
4. to position ourselves as a goalkeeper.
5. to intercept a ball from a person on the other team.
6. to use the skills we have developed in a competition.

Key Questions

1. Which skills did you use in the game?
2. What is intercepting?
3. Why do we make our bodies big when being a goalkeeper?

Equipment

Small balls, large balls, beanbags, cones, hoops, mats, quoits, targets, skittles, and goals.

Vocabulary

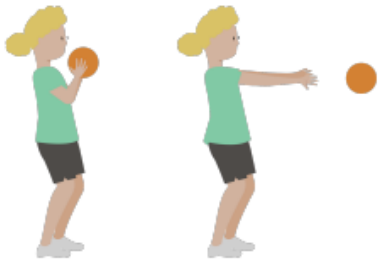
Rebound, aim, speed, direction, scoring, controlling, following, intercepting, tactics.

Rules

- Goalkeepers can save the ball using their hands, legs or feet.
- Other players can only use their hands.

Assessment Overview

Head - Select the most appropriate skill to move forward.
Hand - Can send a variety of different sizes and shaped balls.
Heart - Work with a partner and in small groups to develop specific skills.



Year 2 Computing - Spring 1

Y2

COMPUTING: CREATING MEDIA KNOWLEDGE ORGANISER

Overview

Digital Photography

-We can use digital devices to help us to take and edit photographs.

-Many different devices can be used to take photographs, for example digital cameras, phones, tablets and webcams.

-We can also use lots of different apps and programs to edit and improve photos, for example Photoshop, Luminar and Pixlr.

-We should understand the not all photographs that we see are real – they may have been edited.

Taking Photographs

Photography is a way of making a picture using a camera.

-There are lots of different photography devices (things that we can take photographs on).

e.g. smartphones, digital cameras and tablets.

-There are also lots of different subjects we can take photos of: e.g. a selfie, an action shot, or a beautiful scene.

How to take a photograph

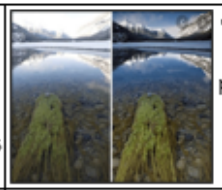
1. Hold the device firmly with both hands
2. Point the camera at the subject.
3. Look at the viewing screen.
4. Move the device to get the shot that you want.
5. Press the capture button.

Choose landscape or portrait.

Editing Techniques

Editing is when we add, change and remove things to get the result that we want. Many things can be edited in photographs to create different effects.

Photograph editing programs often have filters. These can change the colours in a photograph. Different colours can give us different feelings.



You can also change the contrast of a photograph. This can make the subjects become clearer or more blurry.

When the lighting of the photograph is not quite right, we can change the brightness of the photograph.

There are features that we can add or remove from the photograph whilst editing. E.g. removing red eyes.

When we want to save our edit, we should click on this icon or the 'save' button. The first time, we need to choose a file name and a location (folder) to save it in.

Real or Edited?

-There are lots of different ways that images can be changed. Sometimes it is hard to tell whether a photograph is real or has been changed.

-The software for editing photographs is becoming better, and people are getting more skilled at using it.

-People may change a photograph to make it look as though it is real, but in fact it is edited

-They may do this to try and advertise a product or present something in a different way. Do not always believe what you see!

Important Vocabulary

Photography | Editing | Software | Digital | Portrait | Landscape | Scene | Subject | Lighting | Colour

Year 2 Computing - Spring 2

COMPUTING: PROGRAMMING KNOWLEDGE ORGANISER

Y2

Overview

Quizzes in Scratch Jr.

- Programming is when we make a set of instructions for computers to follow.

-Scratch jr. is a program that we can use to code programs using a series of command blocks. This can be used to design quizzes.

-We use algorithms (a set of instructions to perform a task) to program the sprite to do different things.

The Basics of Scratch Jr.

-What is Scratch Jr? Scratch is a website/ app that lets us code our own stories, games and animations.
-Sprites: Scratch Jr. uses characters called sprites. The main sprite is a cat called Scratch.
-Home: Clicking on the house takes you 'home' to your project screen.

-These (right) are the **programming blocks.** We drag them into the **programming area** (right). Clicking the block in the area makes the sprite perform on the stage.

-Background: Backgrounds are added by clicking this icon (right).

-Running the Code: Run your animation by tapping the full screen icon, and then the green flag.

-Sequences: -A sequence is a pattern or process in which one thing follows another. In Scratch Jr. we can stack blocks together side by side in order to create sequences.

-Start Blocks: Start blocks are yellow & are used to start/ run programs. The second block on the right starts the program when the sprite is clicked on.

-End Blocks: End blocks are red. These are used to end your program.

Creating Quizzes

-Outcomes: An outcome is something that happens as a result of us doing something. E.g. in cookery, we can mix and cook ingredients to make an outcome of food! In Scratch Jr. a sequence of commands is followed and this results in an outcome.

-Quizzes in Scratch: We can create simple quizzes in Scratch jr. where the user can select an answer by clicking on a sprite. An outcome occurs when the sprite is clicked.

-Adding and Programming Sprites: We need multiple sprites for the user to select from. To add new sprites, we choose the + option (see right). We can program multiple sprites. The sprite we are programming is the picture in the programming area.

-Programming Sequences: Consider what question to ask your users, e.g. Who lives here? Program each sprite with a command sequence, so that they know if they are right or not when clicking on the sprite.

Algorithms and Programming

-An **algorithm** is a set of instructions for performing a task. Designing an algorithm can help us to make the quiz work in the way that we want it to.

-Programming is when we move the blocks into the position (based on our algorithm design). Programming uses a code that the computer can understand. In Scratch jr. this makes our quiz animation do the things we want it to.

Debugging

-Sometimes, things don't work exactly how we want them to the first time. This may be a problem with our algorithm, or we could have made a mistake in our programming.

-If the animation does not work correctly the first time, remember to **debug** it. This means finding and fixing the problems.

Important Vocabulary

Programming	Scratch Jr.	Sprite	Quiz	Command	Block	Debugging	Sequence	Algorithm	Outcome