

Knowledge Organiser Booklet

Year 4

Spring I

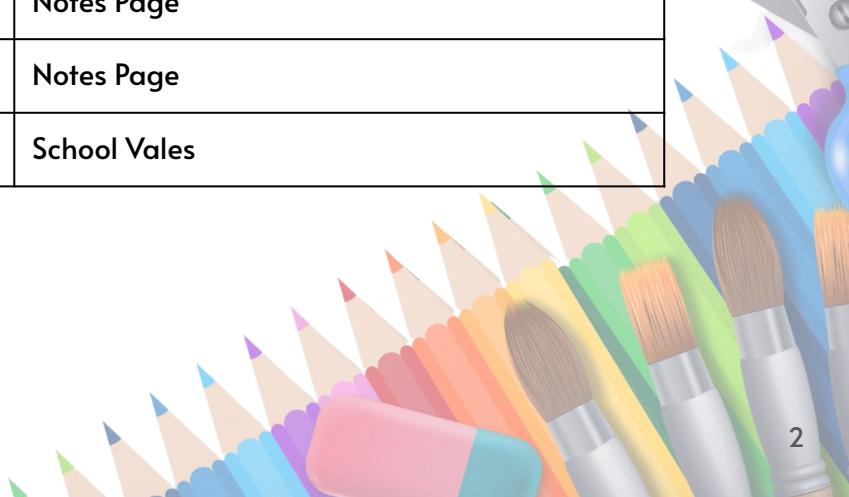


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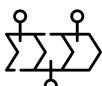


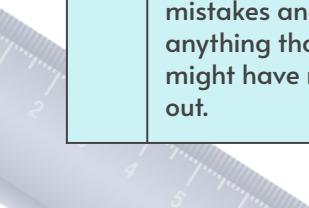
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Use your knowledge organisers to help you remember more.

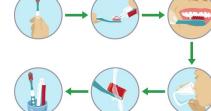
	Test Yourself!	Only Connect! 	Memory Cards 	Order, Order! 	Phone a Friend! 	Picture it! 
1	Look at and study the definitions of the key vocabulary on your knowledge organiser.	Create a mind map, making connections and links with things that you remember without looking back.	Make your own information cards by writing questions about key vocabulary on one side of the card.	Using a simple line, sort information from your topic into chronological, sequential or hierarchical order.	Ask a friend or family member to have the knowledge organiser or memory cards in their hands.	Read over your knowledge organiser and the key vocabulary, remembering the definition.
2	Cover or hide the information on the knowledge organiser and write down everything that you remember.	Challenge yourself by covering or hiding the knowledge organiser, using what you can recall.	On the other side of the card, write the answer to your questions. You could add pictures to your cards.	Check these with a friend or family member, using data on your knowledge organiser, add more detail.	Get them to test you by asking different questions about the information on your knowledge organiser.	Using the information you remember, draw pictures or diagrams to represent words.
3	Check your notes! Correct your mistakes and add anything that you might have missed out.	Check what you have added to your mind map by using your knowledge organiser to correct any mistakes.	Ask a friend or family member to ask you the questions you created or to ask you new questions.	Challenge yourself by adding information you recall from previous topics which are related.	Write your own sentences using the key vocabulary to replace those on the knowledge organiser.	Showing your diagrams to friends or family, ask them to guess which word you have represented.



This is your Computing Knowledge Organiser for Spring I: Repetition of Shapes

Tier 2 Vocabulary

Key Vocabulary

record	algorithm	count-controlled loop	decompose	procedure	programs
To keep information by writing or typing it.	A precise set of ordered steps that can be followed by a human or a computer to achieve a task.	A command that repeatedly runs a defined section of code a predefined number of times.	To break down a task into smaller, more achievable steps.	A named set of commands that can be called multiple times throughout a program .	A set of ordered commands that can be run by a computer to complete a task.
Hew was able to record his code by typing into the Notes app.	A set of steps in order to be followed by a computer.	Sometimes it is necessary for steps to repeat a specific number of times- this is called a count-controlled loop .	Every programming problem needs decomposing so that it can be properly understood.	Procedures and functions help to keep our programs simple and short.	Programs consist of a series of instructions to tell a computer exactly what to do and how to do it.
The teacher needed the children to record their formulas as partners before using the device.	You will create algorithms and then implement those algorithms as code.	If you repeat some of the commands in your program , a certain amount of times, use count-controlled loops .	If there is an issue in your algorithm , you may need to decompose the code to find the problem.	When creating a procedure , the word 'TO' is typed, followed by the procedure name.	You will create programs by planning, modifying, and testing commands to create shapes and patterns.
The timeline was a great record of events from the past.					

How this connects with previous learning

In Year 2, you designed **algorithms** and then tested those **algorithms** as **programs** and debugged them.

In Year 3, you created your own **programs** , featuring sequences.

In Year 3, you also designed and coded your own maze tracing **program**.

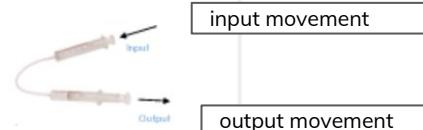
How this connects with future learning

Later in Year 4, you will explore the concept of repetition in **programming** using Scratch.

In Year 5, you will be introduced to further loops in order to control the flow of **programs** .

In Year 6, you will use repetition in the topic, Sensing Movement.

This is your Design Technology Knowledge Organiser for Spring I: Pneumatics

DT Themes		Tier 2		Key Vocabulary			
mechanisms	constraint	innovative	pneumatic system	input movement	output movement	compress	
A device used to create movement in a product.	Something that limits or controls what you can do.	Something new and original.	A system that works using gases (air).	The movement that is put into the system.	The movement that comes out of the system.	To press or squeeze something so that it takes up less space.	
Mechanisms are used in many everyday objects including analogue clocks and bikes.	Time constraints mean that there is only a certain amount of time to complete a project.	The wheel was an innovative product because it made it much easier to transport items or people quickly.	Syringes and tubing will create our pneumatic system .	Our input movement will be pushing the syringe	Our output movement will be the creature moving.	We will compress the air in the syringes.	
We can create a simple mechanism using syringes and tubing.	A money constraint means that you are given a budget which you must stick to.	Mobile phones were an innovative product as they allowed people to be contacted outside of the home.	A bicycle pump uses a pneumatic system .	The input movement when riding a bike is pedalling.	The output movement when riding a bike is the bike moving forwards.	When we crush a tin can, we are compressing it.	
Our mechanisms will make our creature move.	Limited resources can also be a constraint for a project.	Innovation enables us to solve new or existing problems.					

How this connects with previous learning

In Year 1, you designed, made and evaluated a moving poster.

In Year 2, you designed, made and evaluated a vehicle using wheels and axles.

In Year 3, you considered input and output when making a moving greetings card.



How this connects with future learning

In Year 5, you will design, make and evaluate a moving display using cams.

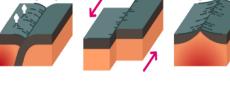
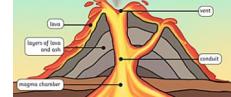
In Year 6, you will design, make and evaluate a vehicle using a pulley system.

In Year 6, you will design, make and evaluate an electrical system, considering a range of constraints.

This is your **Geography** Knowledge Organiser for Spring I: Tectonic Plates

Tier 2 Vocabulary

Key Vocabulary

identify	data	plate boundary	tectonic plate	earthquake	volcano	mountain
To show who or what someone or something is.	Facts and statistics gathered together.	The point where two tectonic plates meet is called a plate boundary .	Tectonic plates are gigantic pieces of the Earth's crust that move slowly.	An earthquake is the shaking and vibration of the Earth's crust due to movement of the tectonic plates.	A volcano is an opening in the Earth's crust through which molten rock and gases trapped under the surface erupt	Mountains are areas of land that are much higher than the land surrounding them.
In Year 3, you learnt about settlements and were able to identify the difference between a town and a city.	In Year 3, you learnt about land use patterns and looked at data .	Most tectonic activity like volcanoes and earthquakes happens at plate boundaries.	These plates move slowly and either move apart, towards or past each other. Earthquakes and volcanic eruptions are caused by the movement of tectonic plates	Most earthquakes occur at the boundaries between tectonic plates. As plates slide past each other friction causes energy to build up. It becomes so great that the energy is released, which creates an earthquake.	Volcanoes are usually found along the boundaries of tectonic plates. Most volcanic eruptions are caused by tectonic plates, moving towards each other.	Some well-known mountain ranges in the four countries that make up the UK include: the Cairngorms in Scotland the Pennines in England the Mourne Mountains in Northern Ireland Snowdonia in Wales
We use geographical enquiry skills in our work and identify geographical questions and issues.	As geographers, we also collect, interpret and analyse geographical data .	Some tectonic plates slide past each other, others move away from each other and some bump into each other. Sometimes these plates lock together when they meet. This is called a plate boundary .	Tectonic plates move slowly, creating mountains, islands and even re-arranging continents.	The Richter magnitude scale is used to measure the size of earthquakes. The higher the number, the more powerful the earthquake and the higher the chance that it will cause real damage.	A lot of volcanic activity occurs in the 'ring of fire'. The 'ring of fire' is a group of volcanoes that are located along the plate margin of the Pacific plate.	The highest mountain ranges are created by tectonic plates pushing together and forcing the ground up where they meet. This is how the mountains of the Himalayas in Asia were formed.
In this unit you will be able to identify where earthquakes and volcanoes are located around the world.	You will look at data collected from earthquakes to determine the strength using the Richter scale.					

How this connects with previous learning

In Year 2, you learnt to name and locate the world's seven continents.

In Year 3, you learnt to identify lines of longitude and latitude.

In Year 3, you learnt to locate the Northern and Southern Hemispheres.



How this connects with future learning

In Years 5 and 6, you will continue to use maps, atlases and globes to locate countries and describe a range of physical features.

This is your PSHE Knowledge Organiser Health and Wellbeing for Spring I: Health and Wellbeing

Key Vocabulary

mental health

Our **mental health** is our emotional wellbeing. Good mental health is equally as important as good physical health.

There are some simple things that we can all do that can help our mental health. They are known as the five ways to wellbeing. They are: be active, take notice, connect, keep learning and give.

If you are worried about your mental health, you should talk to a trusted adult.



mistake

A **mistake** is an error or wrong action or statement made due to a wrong judgment or limited knowledge.

Mistakes help you learn what can support you the next time you approach a similar situation. Mistakes all offer a lesson and therefore is it very useful to be able to accept the uncomfortable feeling that comes with making a mistake and learn from the experience.



negative emotions

We experience a range of emotions and this is part of the natural human experience.

Negative emotions are emotions which make us feel unhappy or uncomfortable. For example, sadness, anger, worry or embarrassment.

We can use the Zones of Regulation to identify and talk about how we are feeling. We can use strategies to help us cope with negative emotions such as breathing techniques or visualisation.



positive emotions

Positive emotions are emotions which make us and others around us feel happy.

Different things make different people happy and we should respect these differences.

When you are in the Green Zone, you are good to go and ready to learn.

We can share our positive emotions to help others feel positive too.



responsibility

Responsibility means making good choices and taking accountability for our own actions.

All emotions serve a purpose and are important. They lead us to behave in different ways. We can control some things but not others. We are responsible for the actions we take, given how we feel.

We can take action to positively impact our mental health and happiness.



visualise

To **visualise** means to create an image of something in the mind.

Visualising uses our imagination to change our thoughts by focusing on something positive.

You can decide what to think about and what to imagine.

Visualising can help when you are stressed, nervous, worried, angry or in pain.



How this connects with previous learning

In Year 2, we described a range of feelings and developed simple strategies for managing them. We understood what it means to have a healthy diet and to look after our teeth.

In Year 3, we explored the different aspects of our identities. We learnt how to break down barriers by identifying small, achievable goals.



How this connects with future learning

In Year 5, we will understand the purpose of failure. We will understand the importance of relaxation and sleep. We will be able to plan healthy meals.

In Year 5, we will consider how to take responsibility for our own feelings and actions.

In Year 6, we will explore the potential impact of technology on physical and mental health. We will explore strategies to deal with difficult situations.

This is your **Physical Education** Knowledge Organiser for Spring I: Gymnastics

Key Vocabulary

pivot	compositional	control	direction	actions	refine
In gymnastics, a pivot refers to a turning or rotating movement performed on one foot while maintaining balance and control.	Refers to the artistic and creative elements of a routine or performance	The ability of a gymnast to maintain precision, balance, and mastery over their body movements.	The orientation or path of movement that a gymnast takes while performing various skills, sequences, or routines.	The specific movements, skills, and techniques performed by gymnasts.	To improve, perfect, or fine tune execution, technique and overall quality of gymnastics skills, movements, or routines.
Pivots are seen in various gymnastics disciplines, including artistic gymnastics, rhythmic gymnastics and balance beam routines.	Compositional aspects in gymnastics are important for creating a visually appealing and engaging routine.	Control in gymnastics is essential for achieving accuracy, consistency, and safety in the execution of skills.	In gymnastics there are several directions that are commonly referred to: Forward Backwards Sideways Diagonal Rotation	Actions in gymnastics can include: jumps, tumbling, balances, swings, vaults, turns, dismounts	Refining in gymnastics can include: technique, precision, artistry, difficulty



How this connects with previous learning

In Year 2, we learnt a range of recognised point balances.

In Year 3, we used core strength to link elements.



How this connects with future learning

In Year 5, we will learn how to identify similarities and differences in sequences.

In Year 5, we will learn how to create longer and more complex sequences.

In Year 6, we will learn how to demonstrate accuracy, consistency and clarity of movement.

This is your **Physical Education** Knowledge Organiser for Spring I: Dance

Key Vocabulary

choreograph	formation	emotions	routine	freeze frame	improvisation
To create and arrange the movements, steps and sequences that forms a dance piece.	The spatial arrangement of dancers on the stage or performance area.	The expressive qualities and feelings shown by dancers through their movements.	The structured sequence of movements, steps and choreography.	This is the temporary pause or stillness in movement by holding your body.	The spontaneous creation and execution of movement without prior planning or choreography
A choreograph is responsible for crafting the overall composition and flow of a dance.	Dance formations can change throughout a dance piece with dancers changing from one arrangement to another.	Dancers use their bodies to express emotions , using their technical skills and moves to show specific feelings.	Dance routines can take various forms, styles, and durations depending on genre of dance.	Freeze frames can be incorporated into various dance genres and styles, including contemporary dance, ballet, jazz, and theatrical performances.	Improvisation in dance can occur individually or in a group. It encourages dancers to trust their instincts.



How this connects with previous learning

In Year 2, we explored space, direction, speed, movement and the use of body parts.

In Year 3, we worked as part of a group to create and perform.



How this connects with future learning

In Year 5, you will perform a sequence using props.

In Year 6, you will perform different styles of dance fluently and clearly.

In Year 6, you will work collaboratively to include more complex compositional ideas.

This is your **Religious Education** Knowledge Organiser for Spring I: Sikh Beliefs

Tier 2 Vocabulary

interpret

Guru Nanak

To explain the meaning of information.

In Year 3, you learnt about how different religions **interpret** their religious scriptures.

In Year 4 you will learn how Sikhs **interpret** the Guru Granth Sahib and use it in their daily lives.

In this unit we will ask you to **interpret** information on Sikhism and formulate your own views and opinions around key questions.



Gurdwara

A Gurdwara is a place where Sikhs come together to worship.

The meaning of the Punjabi word Gurdwara is 'the residence of the Guru' or 'the door that leads to the Guru'.

The Gurdwara has many purposes. It is a place to learn spiritual wisdom, a place for religious ceremonies, a place where children learn the Sikh faith and a community centre that offers food and shelter to those who need it.



Key Vocabulary

Amrit ceremony

A special ceremony called taking Amrit is the way for Sikhs to show their commitment.

The Amrit ceremony takes place in the Gurdwara before the Guru Granth Sahib and in the presence of 5 initiated Sikhs. During the ceremony, hymns are recited from the Sikh scripture and prayers are said.

Amrit is a mixture of sugar and water and is stirred with a double edged sword and then blessed. During the ceremony Sikhs drink some of the Amrit and have it sprinkled on their eyes and hair.



the 5Ks

The Five Ks are a set of symbols that Sikhs wear to show their dedication to Sikhism and to show they belong to the Khalsa.

The 5Ks are :

- kara (bracelet)
- kachera (underclothes)
- kirpan (a small sword)
- kesh (hair)
- kanga (comb)

They are called the five Ks because in Punjabi each item begins with the letter k.



the Guru Granth Sahib

The Guru Granth Sahib is the Sikh holy book and Sikhs believe is the last living Guru.

The Guru Granth Sahib is unique because it was compiled by the gurus themselves rather than followers of the religion.

The Guru Granth Sahib is the focus of worship in the Gurdwara. It is placed on a raised platform under the canopy in the diwan hall. It always sits higher than the congregation as a symbol of respect.



How this connects with previous learning

In Year 2, you learnt about sacred books across different religions. You understood how these are used in worship in religious buildings and in homes.

In Year 3, you learnt ways in which Christians, Hindus and Muslims describe God. You learnt why having a belief in something is important to members of a religious community.



How this connects with future learning

In Year 4, you will learn about different commitment ceremonies across a range of religions and specifically the Hindu religion.

In Year 5, you will learn how important celebrations and festivals are to believers in and across different religions.

In Year 6, you will learn how believers feel about places of worship in different traditions.

This is your **Science** Knowledge Organiser for Spring I: Sound

Scientific Enquiry



comparative & fair testing

Comparative testing means testing objects in order to rank them. We will test and compare materials to find the best sound insulator.

Fair tests are enquiries that observe or measure the impact of changing one variable when all others are kept the same. We will conduct pitch and volume tests.

pattern seeking

We **seek patterns** by looking for links between variables. We will be looking for patterns in pitch and volume after conducting different tests.



Working Scientifically

Asking scientific questions

Planning an enquiry

Observing closely

Measuring (taking measurements)

Gathering and **recording** results

Presenting results

Interpreting results
Concluding (drawing conclusions)

Predicting
Evaluating an enquiry



Things you learnt in previous topics

In year I, you identified, named, drew and labelled the basic parts of the human body and were able to say which part of the body is associated with each sense, including that we use our ears to hear.



How this connects with future learning

At secondary school, you will learn that waves on water are undulations which travel across water and can be reflected. You will also learn that the rate of sound waves are measured in Hertz. You will learn about: echoes, reflection and absorption of sound; the speed of sound in air, water and solids; how sound is detected; hearing in humans and animals; pressure waves; about waves transferring information for conversion to electrical signals by microphone.

This is your **Science** Knowledge Organiser for Spring I: Electricity

Scientific Enquiry



identifying & classifying

Identifying means knowing what something is and naming it. **Classifying** means grouping things together if they have something in common. We will classify the materials that are suitable for wires.



Working Scientifically

Asking scientific questions

Planning an enquiry

Observing closely

Measuring (taking measurements)

Gathering and recording results

Presenting results

Interpreting results

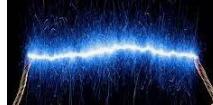
Concluding (drawing conclusions)

Predicting

Evaluating an enquiry

electricity

Electricity is an energy which can be used to power electrical items.



Common appliances that run on **electricity** include: televisions, washing machines, ovens, fridges, computers, lamps, kettles and toasters.



Electricity can be dangerous. You should never pull wires from a socket, put your fingers in a socket or use electrical appliances near water.

mains

Many household devices and appliances run on electricity. Some plug in to the **mains** and others run on batteries.



battery

A **battery** is a source of energy. A battery stores energy until it is ready to be used. **Batteries** come in different shapes and sizes. **Batteries** can provide energy to small items, such as a mobile phone, or large items, such as cars.



circuit

An electrical **circuit** consists of a cell or battery connected to a component using wires.



If there is a break in the **circuit**, a loose connection or a short circuit, the component will not work.

components

A **component** is a basic electronic element that can be fitted together to make a circuit.



Components we will use are: cells or batteries, wires, bulbs, buzzers and motors. A switch can be added to a circuit to turn the **component** on and off by opening or closing the circuit.



conductor

A **conductor** is a material which **electricity** can flow through. Metals are good **conductors**. A **conductor** could replace a wire in a **circuit** and **electricity** would flow through it.



Water, if not completely pure, also **conducts** electricity.

insulator

An **insulator** is a material that does not allow electricity to pass through. Non-metallic solids like rubber and plastic are **insulators** except for graphite (pencil lead).

Things you learnt in previous topics

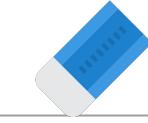
In Nursery and Reception you learnt about similarities and differences in places, objects, materials and living things. You spoke about the features of your own immediate environment and how environments might vary from one another. You made observations of animals and plants and have explained why some things occur and talk about changes.



How this connects with future learning

In year 6, you will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. You will compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. You will use symbols when representing a simple circuit in a diagram.

El material escolar
The stationary

	el lápiz
	el boli
	el rotulador
	el libro
	la regla
	la goma
	la pizarra

Year 4 Spanish Knowledge Organiser
Mi colegio

Las asignaturas
The subjects

Me gusta

el inglés	el español	el arte	la música	la historia	la geografía	*educación* física	las matemáticas	las ciencias
								

¡RECUERDA!

Me gusta + **el** **la** +

Me gusta**n** + **los** **las** +



Tengo un boli.

I have a pen.

No tengo un boli **verde**.

I don't have a **green** pen

Hay dos boli**s** y tres regla**s**.

There are two pens and three rulers.

Me gusta **el** arte.

I like art.

No me gusta **la** música.

I don't like music.

Me gusta **n** **las** ciencia**s**.

I like science.

Me gusta **la** geografía pero no me gusta **la** música.

I like geography but I don't like music.

¿Qué hago?
What do I do?



escucha**o**/
escuchad**o**



habla**o**/
hablad**o**



lee**o**/
leed**o**



escribe**o**/
escribid**o**



abri**o**/
abrid**o**



cerrar**o**/
cerrad**o**



To help you remember and recall key information, you can make your own additional notes here.





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At New Wave Federation, we demonstrate...



**new wave
federation**

Collaboration

Creativity

Focus

Kindness

Responsibility