West Norfolk Academies Trust

Knowledge Organisers

1st Summer Term

Science

History

Geography

Art

PSHE

Latin

Computing

R.E.

P.E.

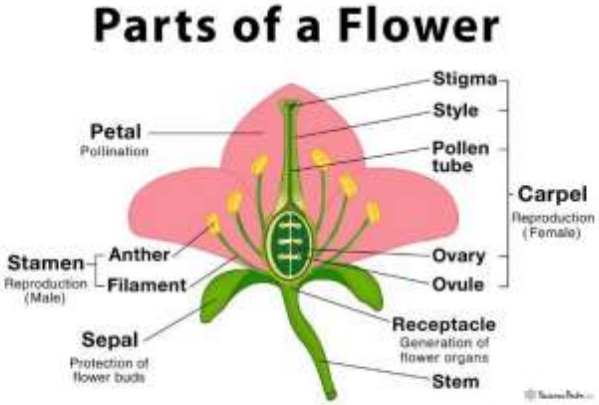
Swimming

Music

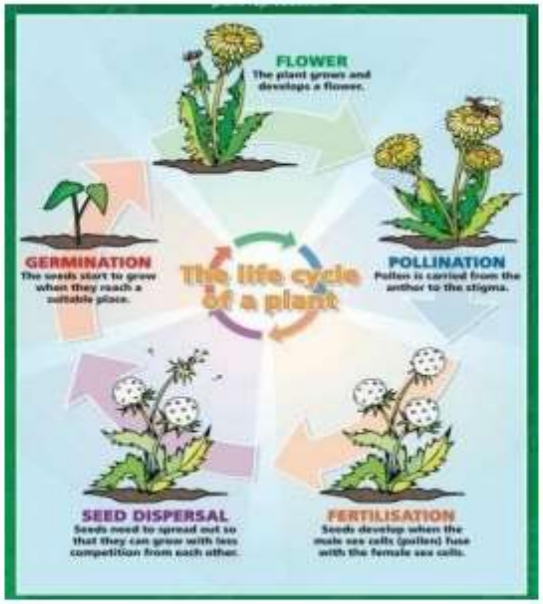
Year 5

Knowledge Organiser - Science – Year 5 – Life Cycles and Reproduction

Key Vocabulary:	
life cycle	development of an organism from birth through reproduction to death
reproduce	to make again or make a copy of
reproduction	the process of making a copy of
asexual	non-sexual reproduction
spore	seed released by a fungus
cloning	to make an exact copy of the parent
regeneration	the ability to replace lost cells or even lost body parts
gametes	male or female germ cell needed for sexual reproduction
internal fertilisation	sperm and egg join inside the body of the female parent
external fertilisation	sperm and egg join outside the bodies of the parents
embryo	a developing organism
zygote	a fertilised egg
gestation	the carrying of an embryo inside a female
monocot	a flowering plant whose seed only contains one embryonic leaf
stamen	the male reproductive organs of a plant
pistil	the female reproductive organs of a plant



Key Knowledge:
I know that plants can reproduce asexually.
I know the parts of a flowering plant and understand their function.
I understand seeds are dispersed by animals, humans, water, wind or the explosion of the seed pod.
I know about the life cycle and reproductive system of animals.



The life cycle of a frog

The life cycle of a chicken

Knowledge Organiser - The Industrial Revolution - History - Year Five

Key Vocabulary	Definition
Industrial Revolution	A time of great change in Britain between 1750 to 1900
Population	The number of people living in a particular place
Invention	Something new which is created, can be an object or an idea
Economy	The system of how money is used within a particular country
Agriculture	The process of farming, including both growing and harvesting crops and raising animals, or livestock.
Poverty	The lack of basic human needs such as clean water, nutrition, healthcare, education and shelter
Industry	The process of making products by using machines and factories
Mass production	The manufacture of a product in large numbers and at a low cost.

Key Knowledge
I know the 'Industrial Revolution' describes the change from a society based on hand manufacturing and human or animal power, to a society based on machinery in factories.
I know the steam engine was one of the most important inventions of the industrial revolution.
I understand the how goods were transported in the Industrial Revolution.
I know industrial revolution caused cities to grow rapidly and that this. was called urbanisation
I understand Victorian children played a role and had dangerous jobs during the industrial revolution.

Pre-industrial Britain

Post-industrial Britain

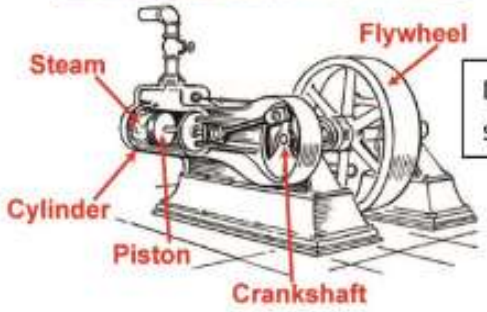


Diagram of a steam engine

1761
The Duke of Bridgewater built Britain's first canal.

1764
James Watt designed the first successful steam engine.

1764
James Hargreaves invented the spinning jenny, making spinning thread much quicker and more efficient.

1771
Richard Arkwright built a mill and filled it with water frames. It was claimed to be the world's first ever factory.

1776
Watt and Boulton designed and built the first successful steam engine.

1779
The first bridge made from cast iron is built across the River Severn.

1825
George Stephenson invented the first passenger locomotive.

1830
The first ever passenger train takes people from Liverpool to Manchester

1838
The SS Great Western, the first steamship to cross the Atlantic, leaves Bristol.

1854
The first underground railway is built in London, giving Birth to the 'tube'

1880
The Education Act was passed, making school compulsory for all children aged 5- 10.

Year 5 - Knowledge Organiser – Geography – New Zealand

Key Vocabulary	Definition
Southern Hemisphere	The half of Earth that is south of the Equator.
Volcano	A crater or vent through which lava, rock fragments and gases erupt from the Earth's crust.
Geyser	A hot spring in which water boils, sending a tall column of water and steam into the air
Tectonic plate	A massive slab of rock that moves over a liquid mantle
Earthquake	A sudden violent shaking of the ground, typically causing great destruction, as a result of movements within the earth's crust or volcanic action.
Predator	An animal that naturally preys or hunts other animals.

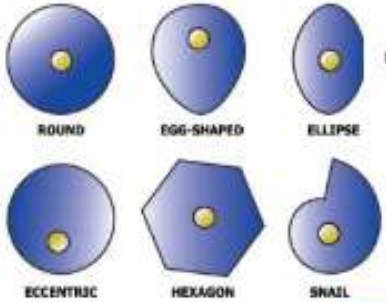
Key Knowledge
New Zealand is a country in the Southern Hemisphere made up of two islands
New Zealand is located on a plate boundary and so has active volcanoes and geysers
Maori were the first people to live in New Zealand and have their own customs and language.
New Zealand has many animals and plants that are only found on this island
The South Pacific has many small islands including Easter Island.

Wellington	Geyser	All Blacks	Kiwi	Easter Island
				
Wellington has been the capital city of New Zealand since 1865	Pohutu Geyser, which erupts up to 15 times a day and shoots hot water around 30m skywards.	The New Zealand national rugby team known as the All Blacks	A native flightless bird which is the national symbol of New Zealand	The distance between Easter Island and New Zealand is 7084km,

Knowledge Organiser –Moving Toys - Design Technology - Year Five

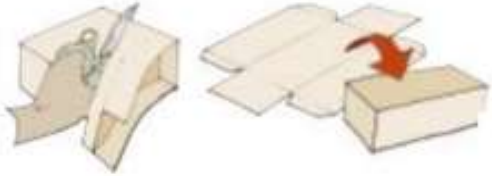
Key Vocabulary:	
Pulley	A grooved wheel over which a drive belt can run.
Gear	A wheel with teeth around its circumference.
Axle	A rod or spindle (either fixed or rotating) passing through the centre of a wheel or group of wheels.
Frame structure	The fitting together of pieces to give a structure support and shape.
Reinforce	To strengthen or support (an object or substance), especially with additional material.
Join	To link or connect two parts together.
Innovation	The process of creating a new method, idea, product, etc.
User	The person who will use the new product.
Purpose	The reason for which something is done or created or for which something exists.
Design brief	A document for a *design* project developed by a person or team. They outline the details of the project including any the function, aesthetics, timing and budget.
Crank	A part of an axle or shaft bent out at right angle used to create movement.
Cam	Devices which can convert round motion into a straight line motion.

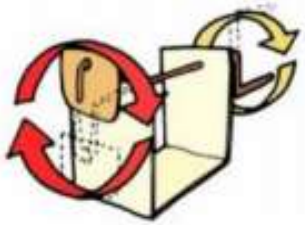
Key Knowledge:
I can explore the shape, patterns and key feature of animals when sketching.
I know why prototypes are used.
I understand how different mechanisms, involving cranks and cams, create different movement.
I know how triangulation strengthens a structure.



Gears

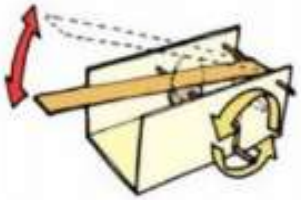
- Gears are toothed wheels that lock together and turn one another.
- The wheels are usually different sizes so that one gear speeds up to slow down the next gear. Gears are also used to change the direction of movement.





a simple crank mechanism for chewing the head (not shown) is fixed, the lower jaw moves

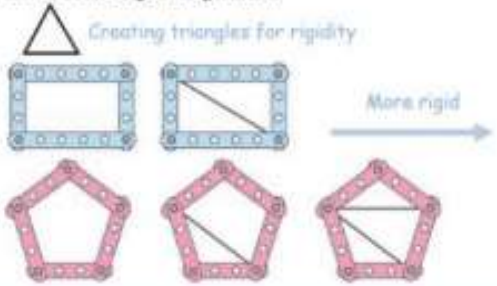
a simple cam and lever mechanism for gawping the lower jaw (not shown) is fixed; the rest of head moves

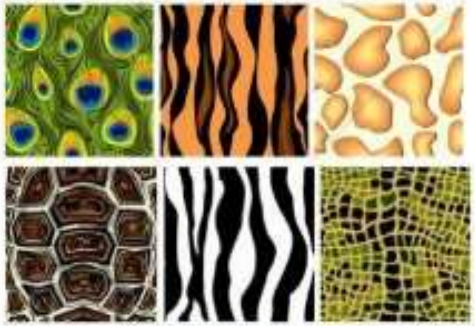


a simple cam and lever mechanism for roaring the lower jaw (not shown) is fixed; the rest of head moves

a simple crank and slider mechanism for licking the head (not shown) is fixed; the tongue moves in and out

Understanding triangulation





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Knowledge Organiser – PSHE – Relationships - Year Five

Key Vocabulary	
Self-esteem	A feeling of being happy with your own character and abilities.
Attributes	To regard a quality or feature as belonging to somebody/something.
Characteristics	A typical feature or quality that something/somebody has.
Compromise	An agreement made between two people or groups in which each side gives up some of the things they want so that both sides are happy at the end.
Pressure	The act of trying to persuade or to force somebody to do something.
Jealousy	Feeling angry or unhappy because somebody you like or love is showing interest in somebody else.
Bullying	The use of strength or power to frighten or hurt people. This can be face to face or through the use of technology.
Safety	To feel safe and protected from danger or harm.

Key Knowledge
I have an accurate picture of who I am as a person in terms of my characteristics and personal qualities
I understand how it feels to be attracted to someone and what having a boyfriend / girlfriend might mean.
I understand how to stay safe when using technology to communicate with my friends.

Reflective questions Ask me this…
What does friendship mean to you?
How do you know who you are talking to online?
What are good ways I can keep myself safe when using technology?

Latin Knowledge Organiser - Unit 5: Romans and Britons

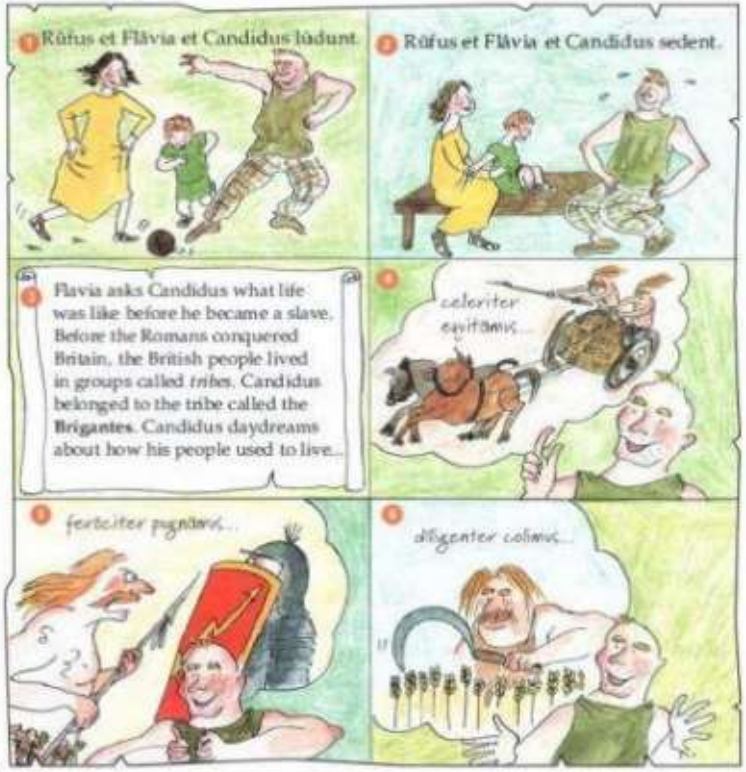
Key Vocabulary	
Latin	**English**
ludunt	They play
sedent	They sit
equitāmus	They ride
colimus	They farm
pugnamus	They fight
ferōciter	fiercely
dīligenter	carefully
celeriter	quickly
et	and
tesserae	mosaics
ita vērō	yes
dīrēctae	straight
commodae	comfortable
nōbīscum	with us
viae	roads
villae	houses

Grammar
Words we use to talk about actions are called verbs, e.g. Candidus **is fighting**.
Words we use to add more information to a verb are called 'adverbs'. For example, celeri**ter** equito - I ride quickly. Adverbs in Latin often (but not always) end in -er.

UnitMotto
non dūcor dūcō = I am not led, I lead

Britons are best!

Rufus, Flavia and Candidus are kicking a ball. They sit down for a rest and begin to talk...



Key Knowledge
To recap prior learning of masculine and feminine verb endings.
To translate simple sentences with verbs and adverbs.
To complete sentences by selecting the appropriate adverb.
To translate sentences with simple plural forms.
To compare and contrast traditional tales from different cultures.

Knowledge Organiser –Programming – Selection in Physical Computing – Computing – Year 5

Key Vocabulary	Definition
Programming	Inputting a set of instructions into a device (usually a computer).
Circuit	A path created between two or more points which carries an electrical current.
Electricity	The flow of electrons through an object. It is the effects of an electric charge.
Microcontroller	A small device that can be programmed to control other devices that are connected to it.
Code	A set of instructions or rules that are written in a particular language understood by a computer system.
LED	An output device that can emit light when electricity is passed through it.
Algorithm	A set of instructions for performing a task, specifically used in coding.
Motor	An output device that can start, stop, go at different speeds and spin forwards and backwards
Modify	Changing or improving a programme
Debugging	The process of removing errors from computer hardware or software systems.

Sequencing and Algorithms

-A **sequence** is a pattern or process in which one thing follows another.

-We design **algorithms** (sets of instructions for performing a task) to help us program sequences involving multiple output devices (e.g. LEDs and motors).

-**Programming** is the process of keying in the code recognized by the computer into the software (using your algorithm).

Trialling and Debugging

-Programmers do not put their computer programs straight to work. They **trial** them first to find any errors:

-Sequence errors: An instruction in the sequence is wrong or in the wrong place.
-Keying errors: Typing in the wrong code.
-Logical errors: Mistakes in plan/thinking.

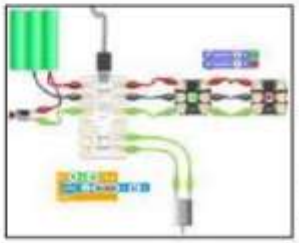
-If your algorithm does not work correctly the first time, remember to **debug** it.

Key Knowledge:

A microcontroller is a programmable device that can control outputs and respond to inputs
To know that an infinite loop means that an action will be repeated forever
To understand algorithms can be presented in different ways.
To know that count-controlled loops are used to control a condition and that conditions can only be true or false.
To understand that 'do until' loops are used to repeatedly carry out actions,
To be able to read code and describe what the output from given code will be.

Overview

Selection in Physical Computing



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

-Microcontrollers are devices that can be programmed to control output devices that are connected to them.

-We use algorithms which we can plan, model, trial and debug, in order to create accurate command sequences involving multiple output devices (e.g. LEDs and motors).

Microcontrollers, LEDs and Motors

-**Microcontrollers:** A microcontroller is a small device that can be programmed to control devices that are connected to it.

-One brand of widely used microcontroller is called a Crumble controller, which can be used to control many things, e.g. LEDs and motors.

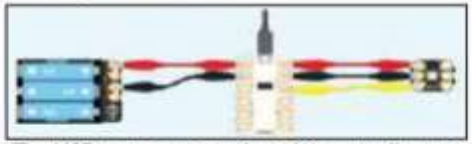
LEDs:

-LEDs are output devices that are emit light. When electricity is passed through an LED it produces light. One type of LED light, controlled by a Crumble controller, is called a Sparkle.

Motors:

-Motors are another output device. A motor can start, stop, spin forwards, spin backwards, and go at different speeds.

Creating Circuits:



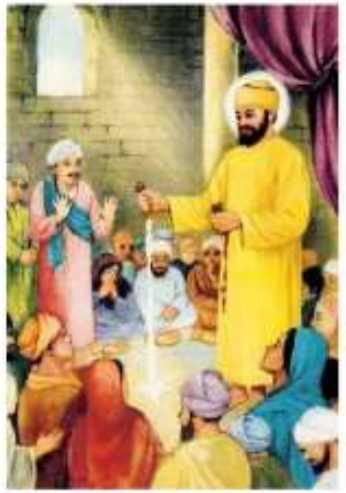
-The USB port connects the microcontroller to a computer. Crocodile clips pass electricity and data through to the LED/motor.
-The + and - power pads on the Crumble should be connected with the + and - power pads on the Sparkle and battery box. The D pads on the Crumble and Sparkle should also be connected.

R.E. Year 5 Summer 1 Knowledge Organiser

Enquiry: Are Sikh Stories Important Today?

Key vocabulary	Definition
Guru	Teacher: used in Sikhism to refer to the ten human Gurus and Guru Granth Sahib
Guru Granth Sahib	Sikh Holy Book
Gurdwara	Sikh place of worship
Waheguru	A god
Guru Nanak	The first Guru and founder of the Sikh faith (1460-1539)
Compassion	Being sympathetic towards those less fortunate.
Equality	The same for everyone

Key Knowledge
I can say why a particular book is special for me.
I know the Sikh Holy Book is called Guru Granth Sahib and it is treated with great respect by the Sikhs. They do not call it a book, they call it Guru, meaning Teacher.
I can retell some stories from the Guru Granth Sahib.
I know that Sikhs value honesty, equality, and truthfulness.
I can explain the key Sikh values and how they can be reflected in my life.



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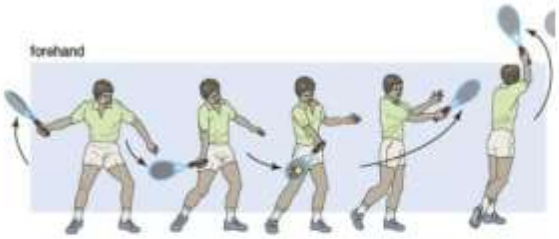
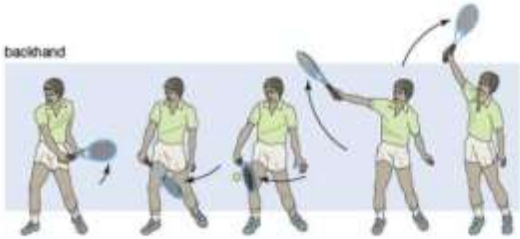
Knowledge Organiser – PE – Tennis – Year Five

Key Vocabulary	Definition
Ready position	The ready position is the position you take before your opponent hits the ball that allows you to move quickly around the court in any direction.
Rally	A sequence of shots back and forth between two players.
Serve	A serve is the shot used to start a rally when playing for a point. It should land in the diagonally opposite service box without hitting the net.
Placement	Strategically hitting the ball away from where your opponent is to help you win the point.
Recover	Move back to a central position during a game to make sure you can return the ball.
Volley	To hit the ball back to your opponent before it bounces.

Skill development	
Tennis	To be able to use the ready position in order to help to keep a rally going over a net, using both forehand and backhand (two-handed) shots.
	To be able to serve the ball from hand to racket to land 'in' on the other side of the court.

Skills	
Ready position	
Forehand position	
Backhand position	

Rules

Win a point if:

- Opponent hits the ball in the net
- Opponent hits the ball out of the court area
- Opponent misses the ball or it bounces twice
- Opponent does a double fault (meaning if they serve the ball and it hits the net, doesn't land on their opponent's side, they can have another go. If they miss again it is a double fault)

Serving rules:

- Ball must bounce over the net and before the service line. If playing on a court with line markings, the ball must also travel diagonally on court into the opposite service box.
- If the ball bounces out or does not go over the net, you have a second serve.
- If the ball hits the net and bounces in, it is called a 'let' and they have their first serve again.
- If a pupil fails to hit their serve 'in' after second serve, the point is awarded to their opponent.

Tactics

- Tactics are important because they help you to outwit an opponent.
- There are different tactics to use if you are defending or attacking.

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KNOWLEDGE ORGANISER MUSIC FREEDOM TO IMPROVISE YEAR 5 UNIT 5

Note	Beats	Note	Beats
𝅝	4 beats	𝅝.	6 beats
𝅗𝅥	2 beats	𝅗𝅥.	3 beats
♩	1 beat	♩.	1½ beats
♪	½ beat	♪.	¾ beat

Songs covered

- Look Into The Night
- Breathe
- Keeping Time

Key Vocabulary	Definition
tempo	The speed at which the music is played, the number of beats per minute eg. 66bpm
time signature	The number of beats in every bar eg. 3/4 (three crochet beats in every bar)
key signature	The key of a piece of music depends on the flats and sharps in the music.
improvise	Create a performance without preparation.
composition	A creative piece of work, often a poem, artwork or piece of music
compose	Write or create art, music or poetry.
staccato	Each note is sharped or detached.
pentatonic	A 5 note scale

SONG 1
Look Into The Night
Style: Pop

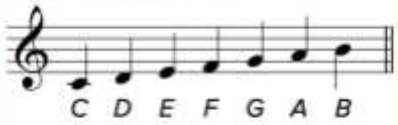
Time Signature: 4/4 — there are four crotchet beats in a bar

Key Signature: D minor — there is one flat in the key signature

SONG 2
Breathe
Style: 20th and 21st Century Orchestral

Time Signature: 3/4 — there are three crotchet beats in a bar

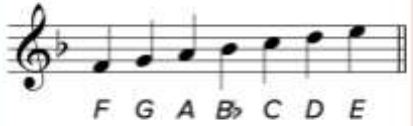
Key Signature: C major — there are no sharps or flats in the key signature



SONG 3
Keeping Time
Style: Funk

Time Signature: 4/4 — there are four crotchet beats in a bar

Key Signature: F major — there is one flat in the key signature



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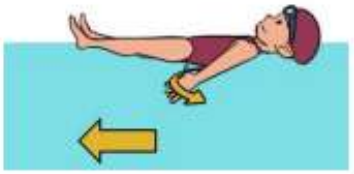
Knowledge Organiser – PE – Swimming – Year 5

Geb Seb 4 P.E.

Key Vocabulary	Definition
Dolphin kick	A dolphin kick is usually used for the butterfly stroke. Created by whipping motion with both legs together.
Stroke	A style of swimming. There are four competitive strokes: butterfly, backstroke, breaststroke, freestyle.
Inhale/Exhale	The acts of breathing in (inhale) and out (exhale).

Skill development
Swim competently, confidently and proficiently over a distance of at least 25m.
Use a range of strokes effectively (for example, front crawl, backstroke and breaststroke.
Perform safe self-rescue in different water-based situations.

Skills	
Front crawl arm action	
Sculling	 
Breathing when swimming