

Year 1: Materials Knowledge Mat

Subject Specific Vocabulary		Materials for clothes		Sticky Knowledge	
materials	What something is made of, e.g. wood or plastic.	1	Leather – used for shoes, jackets and belts.	1	Glass is used for ...
wood	The material that comes from a tree. It varies in hardness.	2	Wool – used for jumpers, socks, pyjamas and coats	- Windows in houses and cars to see through. - Mirrors – to see yourself – reflection.	
plastic	A 'man-made' material that can be shaped or moulded to any shape.	3	Cotton – used for clothes we wear on warmer days and shirts.		
metal	A tough and strong material which can be heated and shaped into anything.	4	Silk – expensive material used for scarves and blouses	2	Metal is used for ...
liquid	Liquids can flow and take on the shape of their container.			Strength –in construction of planes, cars and trains and especially tall buildings.	
gas	We can't see gas but it is all around us. There are different types of gas.				
stretch	A stretchy material is one that is like elastic.			3	Wood is used for ...
stiff	A stiff material is firm and hard and not flexible.			- Doors – most doors are made from wood. - Furniture – most furniture is made of wood, often special wood.	
bend	A bendy material is one that can be twisted and is flexible.			4	Plastic is moulded or shaped ...
waterproof	A material that does not allow water or liquid through.			to form any shape from buckets to animal jelly casts.	
shiny	A shiny material is sparkly or glossy and sometimes glittery.				

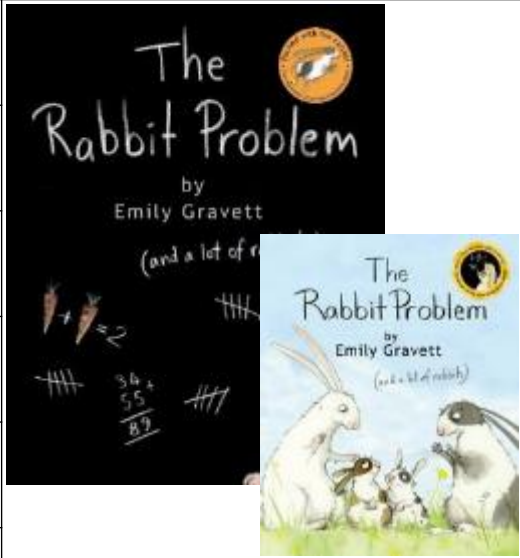
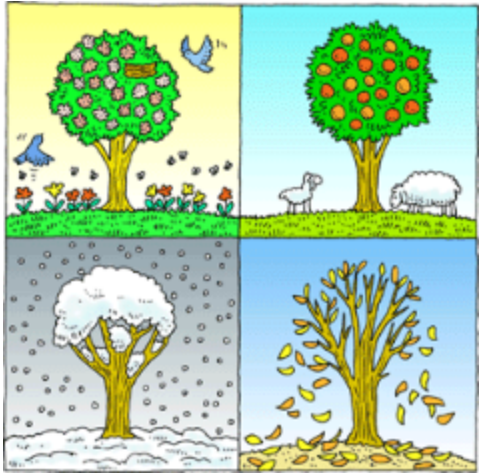
Year 1: Animals Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about animals
fish	A fish is a scaly skinned creature with a spine that swims in water and breathes using gills.		☐ The blue whale can produce the loudest sound of any animal.
amphibians	All amphibians begin their life in water with gills and tails. Examples are frogs and newts.		☐ Horses and cows sleep while standing up.
reptiles	Are animals that are cold-blooded. Most lay eggs and their skin is covered with hard, dry scales.	Wild Animals 	☐ Giant Arctic jellyfish have tentacles that can reach over 36 metres in length.
birds	Birds have feathers and wings. They lay eggs and are warm-blooded animals.		☐ Tigers can grow up to a length of 3 metres and weigh up to 300 kilograms when fully developed.
mammals	Mammals are also warm blooded animals. They breath air and have a backbone.		☐ There are about 400 million+ dogs in the entire world. The average life of a dog depending on the breed can vary from 10 to 14 years.
carnivore	A carnivore is a meat-eating animal that gets its food from killing other animals.		☐ Dolphins use whistling, clicking and other sounds to communicate with each other.
herbivore	A herbivore eats plants.		☐ Camels can survive up to six months without water or food due to the fatty tissues stored in their humps.
omnivore	An omnivore eats plants and meat.		☐ The cheetah is the fastest animal to roam the earth with top speeds of 113 km per hour.
tame	Domesticated animals that are not frightened of humans and do not try to hurt humans.		
wild	Living in the natural environment and not belonging to humans.		
nocturnal	Animals that are active during the night time.		

Year 1: Plants Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about plants
buds	A small lump on a stem or twig that will grow into a leaf, flower or shoot.	 	☐ Some trees can live for thousands of years.
bulbs	The resting stage of a plant that is usually formed underground.		☐ Around 2000 different types of plants are used by humans to make food.
deciduous	Deciduous is the name given to trees that lose their leaves in autumn and are bare in the winter.		☐ Some plants are carnivores. A well known example of a carnivorous plant is the Venus Flytrap.
evergreen	Evergreen is the name of trees that have leaves all year round.		☐ Bamboo can be a fast growing plant. Some types can grow almost a metre in just one day!
trunk	A tree's trunk holds up its crown, protects its inner parts and works like a pipeline, transporting essential materials to the different parts of the tree.	Important facts to know by the end of the plants topic: ☐ Know the names of a variety of common wild and garden plants ☐ Know the names of a variety of common trees ☐ Know the difference between deciduous and evergreen trees ☐ Know which plants grow in the local environment	☐ Touching poison ivy will cause an allergic reaction, usually in the form of an itchy rash on the skin.
vegetable	A vegetable is a plant or part of a plant which is used as food, for example cabbage or potato.		☐ As well as looking beautiful, trees help purify the air and provide food and shelter for all sorts of creatures.
wild plants	These are plants that don't grow in our gardens and are self-seeded.		☐ Water and nutrients travel up the tree trunk, through the branches and all the way out to the leaves.
environment	The area where a plant or tree lives is its environment.		
blossom	Blossom is the flower that comes before the fruit. For example, apple blossom comes before the apple starts to grow.		
petals	A petal is a part of the flower and is usually coloured. The colour attracts insects.		
branches	Branches come from the tree trunk and grow outwards.		

Year 1: Seasonal Change Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about seasonal change
Autumn	The time of year between September and November. Many leaves fall off the trees.		☐ In the UK we have four seasons: spring, summer, autumn and winter. Summer is the hottest season and winter the coldest.
Spring	The time of year between March and May. There is usually lots of signs of new growth in Spring.		☐ Spring starts when the day and night are the same length (usually 21 st March. However, many say that Spring starts on March 1 st).
Summer	The hottest season in the UK. It happens between June and August. The longest day is June 21 st .		☐ In summer the longest day of the year is around June 21 st and in winter the shortest day of the year is usually December 21 st .
Winter	The coldest season in the UK. We can have snow in this season. It occurs between December and February.		☐ When we have our summer it is winter in the southern hemisphere. When we have our winter Australia has its summer.
Fall	The name given to the Autumn season by Americans. It is because so many leaves fall off the trees.		☐ In the USA and many other countries the season 'Autumn' is known as the 'Fall'. This is because so many leaves fall from the trees in Autumn.
weather	Weather is what the sky and the air outside are like, such as cold and cloudy.		☐ Seasons change throughout the year because of the way the Earth travels around the Sun.
temperature	It is measurement of hot or cold that can be measured using a thermometer.		
thermometer	This is the instrument that measures the temperature.		
weather symbol 	These are signs used to help us understand more about our daily weather.		
deciduous	Deciduous trees are trees that shed their leaves once a year, usually during the season of autumn.		
coniferous	Most conifers are evergreens, or trees that keep their leaves year-round.		

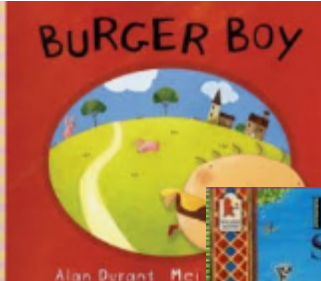
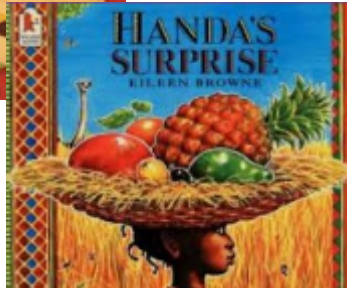
Year 2: Plants and Trees Knowledge Mat

Subject Specific Vocabulary		Interesting Books		Sticky Knowledge about trees
roots	It is the part of a plant that is usually hidden under the ground. They make the plant stable and give it nutrients.			☐ Trees and shrubs take in water and carbon dioxide and give out oxygen.
crown	The crown is made up of the leaves and branches at the top of the tree.			☐ Trees can live for a very long time. The oldest known tree is over 5000 years old.
deciduous	Deciduous trees are trees that shed their leaves in the Autumn and grow new leaves in the spring.			☐ A single tree has many roots. The roots carry food and water from the ground through the trunk and branches to the leaves of the tree.
evergreen	Evergreen trees are the same as coniferous trees. They do not lose their leaves in Autumn.			
blossom	Is the mass of flowers created by a tree. Almost all fruit bearing trees have blossom. The blossom is usually at its best in the spring.	Common trees found in the UK		☐ The trunk is the main body of the tree. The trunk is covered with bark which protects it from damage.
bulb	Bulbs are underground masses of food storage from which plants grow.			
trunk	A tree's trunk holds up its crown, protects its inner parts and works like a pipeline, transporting essential materials to the different parts of the tree.			
stem	The stem is the main part of the plant. It supports the weight of the leaves, as well as the flowers or fruit.	☐ The leaves can be of many different shapes. They take in sunlight and use water and food from the roots to make the tree grow.		
woodland	A woodland is a habitat where trees are the dominant plant form.		☐ As a tree grows, it usually produces growth rings as new wood is laid down around the old wood.	
habitat	The place where a plant or animal (mostly) lives. There are different kinds of habitats, such as grassland, forest, river, sea and desert.			
oxygen	Oxygen is used by animals and plants in the respiration (breathing) process.			
		oak	Horse chestnut	
		conifer	willow	

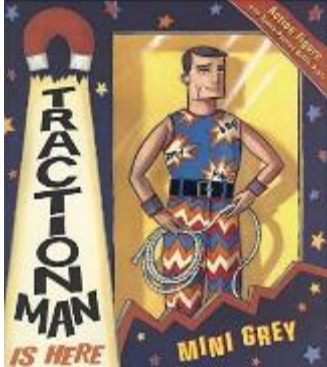
Year 2: Habitats Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about habitats
dinosaur	Dinosaurs were the main animals on Earth for more than 150 million years. They were lizard-like reptiles.	 	☐ A habitat is a place that an animal lives. It provides the animal with food, water and shelter.
indigenous	Produced, growing, living, or occurring naturally in a particular region or environment.		☐ There are many different sorts of habitats around the world from forests to grasslands and from mountain slopes to deserts.
rivers	A river is a flowing, moving stream of water. Usually a river feeds water into an ocean, lake, pond, or even another river.		☐ Animals like cockroaches are really important in a habitat - they eat the dead plants and recycle the nutrients back into the soil.
woodland	Woodland is a low-density forest with plenty of sunlight and limited shade.		☐ People are causing harm to many habitats. Forests are being burnt down, lakes and rivers polluted and the polar ice caps are melting.
ponds	A pond is a body of water smaller than a lake. Ponds support a very wide range of wildlife.		☐ Because resources like water and food may be limited, plant and animal species often compete with each other for food and water.
sea	A sea is part of the ocean partially enclosed by land. Seas are found on the margins of the ocean and are partially enclosed by land.	Important facts to know by the end of the habitats topic: • know how a specific habitat provides for the basic needs of things living there • identify and name plants and animals in a range of habitats • match living things to their habitat • know how animals find their food • name some different sources of food for animals	☐ Because the Earth is always changing, habitats are constantly changing.
rainforest	Tropical rainforests are forests with tall trees, warm climates and lots of rain.		
desert	A desert is any large region that gets very little rain each year. Very few plants or animals live in desert areas.		
species	A group of animals, plants or other living things that all share common characteristics and that are all classified as alike in some manner.		
microhabitats	Microhabitats are the small-scale physical requirements of a particular organism or a community of organisms.		

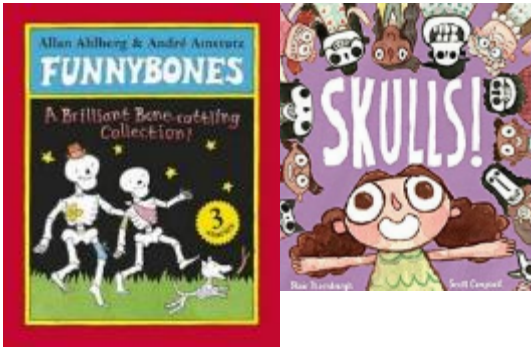
Year 2: Healthy Living Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about healthy living
healthy	Keeping healthy means doing things that are good for your body – things like eating nutritious foods, exercising, brushing your teeth and getting enough sleep	 	☐ Keeping healthy means caring for your body so you have enough energy to learn, play and grow.
diet	Eating a balanced diet means choosing foods in the right amounts from each of the food groups.		☐ All foods contain nutrients which your body needs to stay active throughout the day. Some foods have more nutrients than others.
off-spring	You can refer to a person's children or an animal's young as their off-spring.		☐ Everyone should have their '5 a day' – this means five portions of fruit and vegetables, to get the right amount of nutrients.
exercise	Means to keep your body healthy by running, walking and playing. You will need to feel out of breath if you have exercised properly.		
proteins	Protein is a food group which includes meat, eggs, fish, dairy products, nuts and seeds	Important facts to know by the end of the healthy living topic: • Know that animals, including humans, have young animals that look like them. • Know that the babies will grow into adults. • Know what humans need to survive (including food and water). • Know what animals need to survive. • Know why it is important to exercise. • Know why it is important to eat the right amounts of food. • Know why it is important to keep clean and wash regularly.	
carbohydrates	Carbohydrates are sugars (such as fructose, glucose, and lactose) and starches, which are found in foods such as starchy vegetables, grains, rice, breads, and cereals.		☐ It's important not to eat too much sugar and salt: sugary foods are bad for your teeth and can be fattening, and salty foods can lead to heart disease.
fats	Fats are found in meat and other animal products, such as butter and cheese.		☐ Keep your mouth healthy by brushing and flossing to have clean teeth and gums.
nutrition	Nutrition is the process by which the body nourishes itself by transforming food into energy and body tissues.		☐ It's important to have 30-60 minutes of exercise every day. This can include running around and playing games with friends.
survival	Survive usually means to succeed in keeping alive.		
hygiene	Taking care of our body by being clean and making sure we don't smell.		

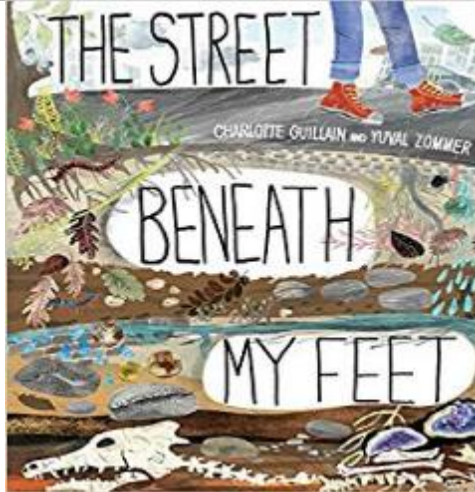
Year 2: Materials Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about materials
metal	When heated, metals can be shaped into anything from a tiny paperclip to a huge aircraft.		☐ Wood is used to make buildings and furniture and for making fires and heating.
plastic	Plastics are made from natural materials such as wood, coal and oil.		☐ Most of the paper or cardboard we use came from trees.
Charles Macintosh	We know Charles Mackintosh for inventing mackintoshes which was a special type of coat. We use the word 'mac' today because of his invention.		☐ Glass is a hard transparent material that can be made in many shapes.
John Dunlop	John Dunlop was a person who improved the tyres on cars. You may see tyres on cars with the name DUNLOP on them.	Important facts to know by the end of the Year 2 materials topic: ☐ Know why some materials are more suitable than others for specific uses ☐ Know why glass, wood, plastic, brick or paper would be used for certain jobs ☐ Know that some materials can be squashed, twisted or bent according to need ☐ Know why certain materials are suitable for many different uses ☐ Know about the lives of important people who have developed useful new materials	☐ Glass is usually transparent, which means you can see through it, but can also come in different colours.
wood	Wood is a material that comes from trees and is used to make furniture, floors and many other things		☐ Glass is often used to make windows and bottles.
squashing	Squashing is pushing things closely together.		☐ Many churches have special coloured glass often used to make religious pictures.
bending	Bending is changing the shape and direction of something.		☐ Plastics are used to make many of the things we use in everyday life. They are used for toys, bicycle helmets, mobile phones, window frames and many other common items.
twisting	To twist something you move one part clockwise and the other part anticlockwise.		☐ Petrol is used to make plastic and it invented just over a 100 years ago.
stretching	Stretching is to change shape by pulling it to make it longer or wider.		
John McAdam	John McAdam is most famous for inventing the tar used to make roads. It was known as Tar McAdam.		

Year 3: Skeleton and Muscles Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about our skeleton and muscles
nutrition	Nutrition involves drinking enough water and eating the right amount of items from the four main food groups.		☐ The spine is made up of 33 bones and the smallest bone is found in our ear.
skeleton	The human skeleton is made of bone and grows as we grow. Our skull protects our brain and our ribs protect our heart and lungs.		☐ Muscles make up 40% of our total body weight and the smallest muscle is found in our ears.
muscles	Muscles are attached to bones by tendons and help them to move. When a muscle contracts it gets shorter and pulls on the bone it is attached to.		
diet	Our bodies need a balanced diet to work properly. This involves drinking enough water and eating healthily.	Important facts to know by the end of the skeleton and muscle topic: • That humans cannot make their own food. They get their nutrition from what they eat. • That humans have skeletons and muscles for support, protection and movement. • Know that the body parts have special functions. • Know the names of the body parts associated with skeleton and muscles. • Compare the diets of different groups of animals, including humans. • Know what a healthy meal looks like.	☐ When we are born we have about 300 bones in our body by the time we are adults we have 206 because some bones have fused together.
joint	Joints allow the body to make movements. The body has many bones and are connected through the joints.		☐ When broken our bones will repair themselves. Doctors use casts or splits to make sure they grow back straight.
pelvis	The pelvis is a bony cradle-shaped structure located at the base of the spine.		☐ The longest bone in the human body is the thigh bone called the femur.
cartilage	Cartilage is a connective tissue found in many areas of the body including joints between bones e.g. the elbows, knees and ankles.		☐ Bone marrow makes up 4% of a human body mass. It produces red blood cells which carry oxygen all around the body.
rib cage	It is made up of curved bones. The rib cage is found in the chest area. It protects a person's internal organs from damage.		
tendon	Muscles are attached to the bone by tendons and work in pairs to allow for smooth movement.		
spine	Also known as your backbone, your spine is a strong, flexible column of ring-like bones that runs from your skull to your pelvis.		

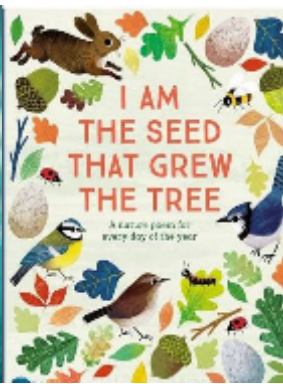
Year 3: Rocks and Magnets Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about our rocks and magnets
fossil	A fossil is the preserved remains or traces of a dead organism.		☐ Rocks have been used by humans for millions of years, from early tools and weapons through to construction materials for modern buildings.
soil	Soil consists of a mix of organic material (decayed plants and animals) and broken bits of rocks and minerals.		☐ Sediment deposited over time, often as layers at the bottom of lakes and oceans, forms sedimentary rocks.
crystals	Crystals are a special kind of solid material where the molecules fit together in a repeating pattern.		☐ Extreme pressure and heat over time forms metamorphic rocks. Examples are marble and slate.
sedimentary	Sedimentary rocks are made when sand, mud and pebbles get laid down in layers. Over time, these layers are squashed under more and more layers.		☐ When magma cools and solidifies it forms igneous rock. Examples are granite and pumice.
metamorphic	When a rock experiences heat and pressure, it becomes a metamorphic rock. All metamorphic rocks start as another type of rock.		☐ The Earth is a very big magnet. Its North and South poles are highly magnetic.
igneous	Igneous rock is formed when magma cools and solidifies. It may do this above or below the Earth's surface.		☐ A magnet always has north and south poles. Cutting a magnet in half makes two magnets, each with two poles.
magnetic pole	Either of two areas on the earth's surface, one near the geographic north pole and one near the geographic south pole, where the Earth's magnetic fields are strongest.		☐ Magnets only attract certain types of metals, other materials such as glass, plastic and wood aren't attracted.
organic matter	Organic matter is matter that has come from a recently living organism. It is capable of decaying.		
attract and repel	A magnetic field is the area around the magnet where it can attract or repel things. When you bring two magnets together they will either attract or repel.		
		Important facts to know by the end of the rocks and magnets topic: • Know how fossils are formed. • Know what soil is. • Know that magnets attract some objects but not others. • Know the difference between igneous, sedimentary and metamorphic rocks. • Predict whether two magnets will attract or repel each other. • Know that magnets have two poles. • Group together different rocks according to different attributes.	

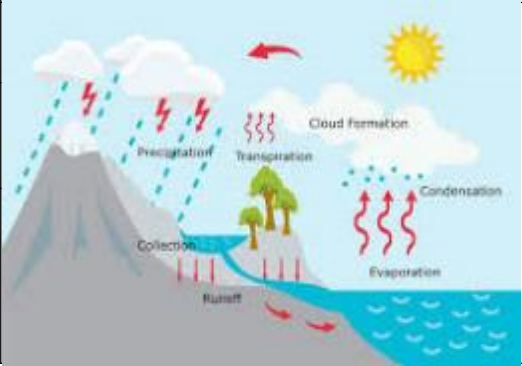
Year 3: Light and Dark Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about light and dark
reflection	A reflection occurs when a ray of light hits a surface and bounces off.	 	☐ Black and dark objects absorb light and heat whilst white or light objects reflect it.
shadows	A shadow is formed when an object blocks out the light. The object must be opaque or translucent to make a shadow.		☐ Some objects like glass are transparent which means that light can shine through them.
light source	The main light source for Earth is the Sun. Some other luminous objects give out light, for example, torches, candles and lamps.	Important facts to know by the end of the light and dark topic	☐ Our main source of light on Earth comes from the Sun. A ray of light travels very fast.
opaque	Opaque objects do not allow light to pass through them, in most cases creating a shadow.		☐ Darkness is made by blocking light from the sun or some other source of light, which makes shadows.
refraction	It is the change of direction of a light ray as it passes through different surfaces, for example, from air to water.	• What dark is (in relation to absence of light). • Know that we need light so we can see things. • Know that light can be reflected. • Know how a shadow is formed. • Understand why shadows change shape. • Know the dangers of looking directly at the Sun. • Know how to protect oneself from direct sunlight.	☐ The Sun and other stars, fires, torches and lamps all make their own light and so are examples of sources of light.
periscope	A periscope is an instrument people use to look at things from a hidden position.		☐ A mirror is not a source of light, it merely reflects light. Similarly, the Moon is not a source of light because it reflects the light from the Sun.
nocturnal	If something is nocturnal, it belongs to or is active at night. For example, bats and owls.		☐ Some animals are nocturnal. They are awake at night and can see very well in the dark. Our eyes aren't designed to see at night.
orbits	An orbit is a repeating path that one celestial body takes around another.		
convex	Convex lenses, also called positive lenses, are lenses that curve outward from the edges to the centre.		
concave	A concave lens is one where the centre of the lens is thinner than the edges.		

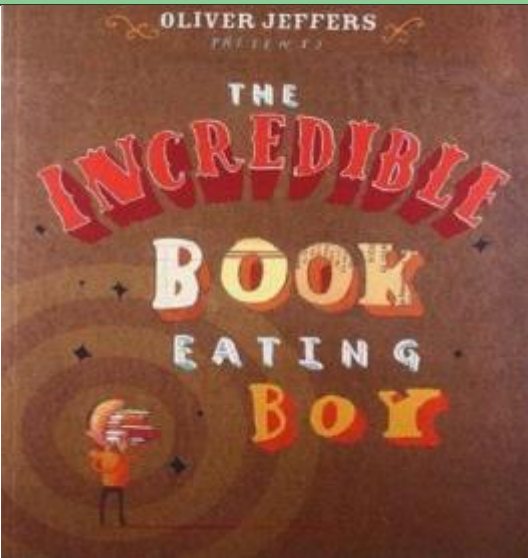
Year 3: Plants Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about plants
roots	The root is the part of a plant that typically lies below the surface of the soil.	 	☐ Trees are more than just part of our natural landscape. They provide shelter and food for wildlife.
stem	The stem is the plant axis that bears buds and shoots with leaves.		☐ Trees absorb carbon dioxide and produce breathable air.
nutrients	Nutrients are the food the plant wants. Most of the plant's nutrients comes from the soil.	Important facts to know by the end of the plant topic	☐ A large tree can consume 100 gallons of water out of the ground in one day.
pollination	Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma.		☐ Not only do trees provide shade in the summer, but they serve as a windbreak in the winter too.
seed dispersal	Seed dispersal is the movement or transport of seeds away from the parent plant.	☐ Know the function of the different parts of the flowering plant. ☐ Identify and know the names of: stem; roots; leaves and flowers. ☐ Know what a plant needs to grow. ☐ Know that light, air, water, nutrients from soil are all important for plant growth. ☐ Find out how water is transported within a plant. ☐ Know the part that flowers play in the life cycle of a flowering plant. ☐ Know about pollination, seed formation and seed dispersal.	☐ The oldest known living tree is 4,800 years old.
fertiliser	Fertilisers are used to increase the rate of a plant's growth.		☐ Trees are able to communicate and defend themselves against attacking insects.
seed formation	A seed is a small baby plant enclosed in a covering called the seed coat, usually with some stored food.		☐ Several centuries ago in Holland, tulips were more valuable than gold.
stigma	The stigma is usually sticky and receives pollen.		☐ Some plants such as orchids do not need soil to grow-they get all of their nutrients from the air.
anther	The stamen has a pollen producing structure at the end which is called the anther.		☐ Broccoli is actually a flower.
soil	The soil has water and nutrients that a plant needs to grow healthily.		

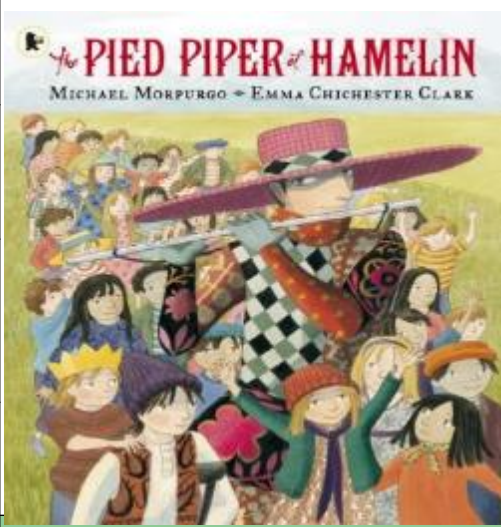
Year 4: Water Cycle Knowledge Mat

Subject Specific Vocabulary		Stages of the water cycle		Sticky Knowledge about water	
water vapour	Water that is in the form of gas.	1	The sun heats up rivers, lakes and the sea.	1	Water can exist in three forms: liquid (water), solid (ice) or gas (water vapour).
condensation	When water vapour that is around us changes from a gas back to liquid.	2	Water evaporates into the air. This is called water vapour.	2	About 70% of Earth is covered in water.
precipitation	Any watery substance such as rain, water, snow, hail or sleet that falls to Earth.	3	The water vapour rises, cools and condenses to water in the form of clouds.	3	There are underground reservoirs called aquifers.
evaporation	When liquid changes into gas, usually when it heats up.	4	The droplets in the clouds become too heavy and fall as rain, snow or hail.	4	Some water in the ground may stay there for thousands of years.
substance	Any solid, liquid, powder or gas is a substance.	5	The rain, snow or hail is then collected in rivers that run off to the sea.	5	Water can be used to create electricity through a hydro-electric power station.
matter	Any solid, liquid or gas that exists in the universe.	6	The cycle starts again.	6	The Nile is 4132 miles long, making it the longest river in the world.
lava	Very hot liquid that comes out of a volcano.			7	Humans are made up of about 75% water.
solid	A substance that stays the same shape. Its particles do not move.			8	97% of water is in the oceans (this is salty water) and 2% is in the ice caps, leaving only 1% available for us to drink.
liquid	Liquids will flow as they are made up of loosely packed particles.				
gas	Gaseous matter is made up of matter that is so loose it is always moving.				

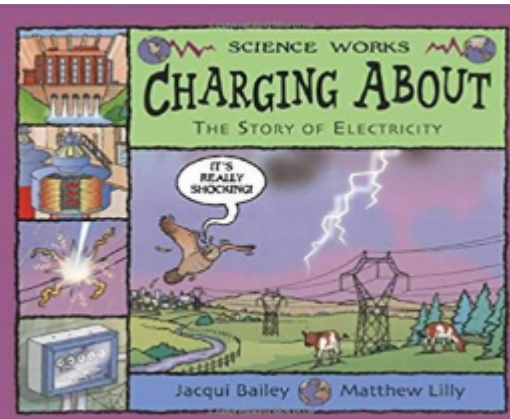
Year 4: Digestive System Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about the digestive system
pancreas	The pancreas produces juices called enzymes which help the body digest food.		☐ The oesophagus is the food highway that takes your food from your mouth down into your stomach so that digestion can begin.
oesophagus	The oesophagus is like a stretchy tube that moves food from the back of the throat to the stomach.		☐ The stomach is filled with powerful acids that break down the food into smaller pieces. It also lets us know when we are hungry.
intestine	The main function of the small intestine is absorption of nutrients and minerals from food. The major function of the large intestine is to absorb water from the remaining indigestible food.		☐ The liver creates different enzymes to help process food nutrients that are collected in the small intestine.
organ	The skin is the biggest organ of your body. Other organs include your brain, lungs, heart, liver, stomach, intestines, pancreas, and kidneys, all called internal organs.		☐ The gallbladder is a storage unit for all of the bile and enzymes created by the liver. It stores them until they are needed for digestion.
molars	Molars are the teeth that are used for chewing and grinding our food.		☐ The main job for the small intestine is to absorb nutrients and minerals from food. In fact, 90% of food absorption takes place here, making it our main digestion location.
canine	Canines are the teeth used for ripping and tearing our food. We have two located at the top of our mouth and two at the bottom.		☐ The outside of our teeth are covered with enamel and the inside have blood vessels and nerves.
food chain	A food chain is a diagram that shows us how animals are linked by what they eat.		☐ The front teeth are called incisors, the four sharp teeth are called canines, the teeth at the back are called molars.
predators	Predators are wild animals that hunt, or prey on, other animals. Predatory animals need the flesh of the animals that they kill to survive.		
prey	The term prey refers to an animal that is sought, captured, and eaten by a predator.		
salivary gland	The salivary glands contain special enzymes that help digest the starches in your food.	Important facts to know by the end of the digestive system topic: • Know and name the parts of the digestive system. • Know the function of each organ of the digestive system. • Know and identify the different types of teeth in humans. • Know the function of different human teeth. • Use food chains to identify producers, predators and prey. • Construct food chains to identify producers, predators and prey.	

Year 4: Sound Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about Sound
vibrating	Sound is caused by the vibration of a medium (usually air) and it travels in waves.	 Important facts to know by the end of the sound topic: • Know how sound is made. • Know how sound travels from the source to the ears. • Know to associate sound with vibration. • Know the correlation between pitch and the object producing a sound. • Know the correlation between the volume of a sound and the strength of the vibrations that produced it. • Know what happens to a sound as it travels away from its source.	☐ Sound travels with a speed of 767 miles per hour but it cannot travel through a vacuum.
pitch	A high sound has a high pitch and a low sound has a low pitch. A tight drum skin gives a higher pitched sound than a loose drum skin.		☐ Sound comes from vibrations. These vibrations create sound waves which move through mediums such as air and water before reaching our ears.
volume	Volume is the perception of loudness from the intensity of a sound wave. The higher the intensity of a sound, the louder it is perceived in our ears, and the higher volume it has.		☐ Dogs can hear sounds at a higher frequency than humans.
insulation	Protecting something by surrounding it with material that reduces or prevents the transmission of sound.		☐ Our ear drums vibrate in a similar way to the original source of the vibration, allowing us to hear many different sounds.
outer, middle and inner ear	The ear is made up of three different sections: the outer ear, the middle ear, and the inner ear. These parts all work together so you can hear and process sounds.		☐ When traveling through water, sound moves four times faster than when it travels through air.
cochlea	The cochlea looks like a spiral-shaped snail shell deep in your ear. It plays an important part in helping you hear.		☐ Sound is used by many animals to detect danger, warning them of possible attacks before they happen.
auditory	Auditory is close in meaning to acoustic, but auditory usually refers more to hearing than to sound.		☐ The loud noise you create by cracking a whip occurs because the tip is moving so fast it breaks the speed of sound!
frequency	Frequency is measured as the number of wave cycles that occur in one second.		
hammer	The ear has little bones called ossicles that help you hear. They are called the hammer (malleus), anvil (incus), and stirrup (stapes). They amplify the sound or make it louder.		

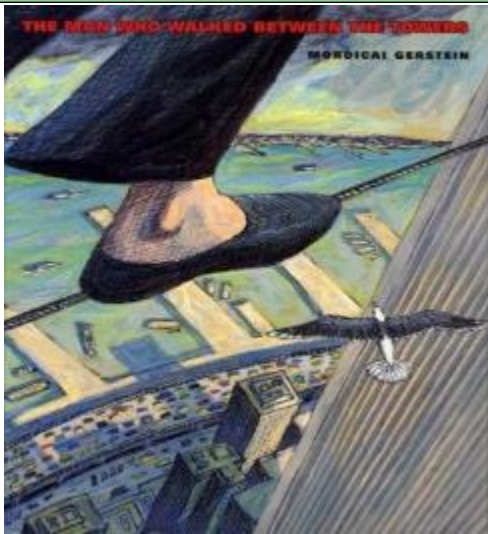
Year 4: Electricity Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about electricity
circuit	An electrical circuit is a completed path through which an electrical current flows.		☐ Electricity can be generated by from power stations, wind, the sun, water and even animal poo!
buzzers	A buzzer is an automatic signalling device. They are used as alarms and door bells.		☐ Electricity is a type of energy that can build up in one place to flow to another.
conductor	A conductor is an object or type of material that allows the flow of an electrical current in one or more directions	Important facts to know by the end of the electricity topic in Year 4 ☐ Know about common appliances that run on electricity. ☐ Know how to construct a simple series electrical circuit. ☐ Identify and name the basic parts of the circuit, including cells, wires, bulbs, switches and buzzers. ☐ Know that a switch opens and closes a circuit. ☐ Know about some common conductors and insulators. ☐ Know that metals are good conductors.	☐ A power station is a place where electricity is created and sent to our homes.
battery	A battery is a device that stores chemical energy and makes it available in an electrical form.		☐ Electricity travels at the speed of light, which is more than 186,000 miles per hour.
cells	An electrical cell is a device that is used to generate electricity.		☐ One flash of lightening could power 1000 houses for a whole year.
switch	A switch is an electrical component that can 'make' or 'break' an electrical circuit.		☐ When an electric charge builds up on the surface of an object it makes static electricity. This is why we sometimes have a small electric shock.
socket	Sockets allow electrical equipment to be connected to the alternating current (AC) power supply in buildings and at other sites.		☐ The first power plant opened in 1882 and was opened by Thomas Edison.
appliance	An electrical appliance is a device that uses electricity to perform a function.		☐ Thomas Edison was a very famous inventor who helped us make the most of electricity from bulbs to fuses.
appliance series circuit	Components connected in series are connected along a single path, so the same current flows through all of the components.		
insulator	An insulator is a material whose internal electric charges do not flow freely.		

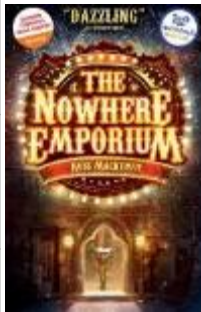
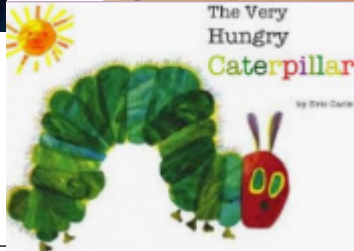
Year 5: Earth and Space Knowledge Mat

Subject Specific Vocabulary			Sticky Knowledge about Earth and space
orbit	An orbit is a repeating path that one celestial body takes around another.		☐ One million Earths could fit inside the sun – and the sun is considered an average-sized star.
solar system	The solar system is made of the eight planets that orbit our sun; it is also made of asteroids, moons, comets and lots more.		☐ An asteroid about the size of a car enters Earth's atmosphere roughly once a year – but it burns up before it reaches us.
astronomical	Astronomy is the study of outer space, focusing on celestial bodies such as stars, comets, planets and galaxies.		☐ The sunset on Mars appears blue.
planet	There are 8 planets in our solar system, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.		☐ Earth is the third planet from the sun and the only world known to support an atmosphere with free oxygen, oceans of liquid water on the surface, and life.
rotation	Rotation is when a shape is turned around a fixed point.	Important facts to know by the end of the Earth and space topic:	☐ There is no atmosphere in space, which means that sound has no medium or way to travel to be heard.
spherical	Something spherical is like a sphere in being round, or more or less round, in three dimensions.		☐ Venus is the hottest planet in the solar system and has an average surface temperature of around 450° C.
crescent moon	It is a slither of the moon that is lit up and can be seen. It is less than half the moon.		☐ The sheer size of space makes it impossible to accurately predict just how many stars exist.
gibbous moon	The best way to describe a gibbous moon is that the moon is three-quarters lit up.		
eclipse	An eclipse occurs when an astronomical object is temporarily obscured. A lunar eclipse is when the Earth moves between the Sun and the Moon, therefore blocking the Sun's rays from striking the Moon.		
lunar	Is anything related to the moon.	• Know about and explain the movement of the Earth and other planets relative to the Sun. • Know about and explain the movement of the Moon relative to the Earth. • Know and demonstrate how night and day are created. • Describe the Sun, Earth and Moon (using the term spherical). • Know information about the planets. • Neil Armstrong was the first man to step on the moon.	

Year 5: Forces Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about Forces	
friction	Friction is a force between two surfaces that are sliding, or trying to slide, across each other.		☐ Frictional force is any force that is caused due to friction. An example of this might be when you put on the brakes on your bike.	
gravity	Gravity is a force which tries to pull two objects towards each other.		☐ Gravity is the pulling force acting between the Earth and a falling object, for example when you drop something. Gravity pulls objects to the ground.	
air resistance	Air resistance is a type of friction between air and another material. For example, when an aeroplane flies through the air.		☐ Surface resistance is the force on objects moving across a surface, such as an ice-skater skating on ice.	
water resistance	If you go swimming, there is friction between your skin and the water particles.		☐ Any kind of force is really just a push or a pull.	
levers	A lever can be described as a long rigid body with a fulcrum along its length.		☐ Air resistance is the force on an object moving through air, such as a plane moving through the sky. Air resistance affects how fast or slowly objects move through the air	
pulleys	Pulley is a simple machine and comprises of a wheel on a fixed axle, with a groove along the edges to guide a rope or cable.	Important facts to know by the end of the forces topic: • Know what gravity is and its impact on our lives. • Identify and know the effect of air resistance. • Identify and know the effect of water resistance. • Identify and know the effect of friction. • Explain how levers, pulleys and gears allow a smaller force to have a greater effect. • Know who Isaac Newton and Galileo were.	☐ Water resistance is the force on objects floating on or moving in water.	
gears	Gears are wheels with teeth that slot together. When one gear is turned the other one turns as well.		☐ Magnetic force is an invisible force created by electrons. Magnetic force controls magnetism and electricity.	
parachute	A parachute is a device used to slow down an object that is falling towards the ground. As the parachute opens, the air resistance increases.			
Galileo	Galileo developed the telescope to enable close observation of the night sky.			
Newton	During his lifetime, Newton developed the theory of gravity and made breakthroughs in the area of optics, such as the reflecting telescope.			

Year 5: Life Cycles Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about Life Cycles
puberty	Puberty is the name for the time when your body begins to develop and change as you move from childhood to adulthood.	  	☐ The years between 6 and 14 - middle childhood and early adolescence - are a time of important developmental advances that establish children's sense of identity.
gestation	Gestation, in mammals, is the time between conception and birth, during which the embryo is developing in the uterus.		☐ Many insects have four stages in their life cycle: egg or the unborn stage; larva – young stage; pupa – inactive (no feeding) stage; and adult stage.
classification	This is the grouping together of similar species of plant, animal and other organisms.		☐ In general, the life cycles of plants and animals have three basic stages including a fertilised egg or seed, immature juvenile, and adult. However, some organisms may have more than three life cycle stages, and the exact names of each stage can slightly differ depending on the species.
precision	For scientists, precision describes a measurement system, that is, how reliable it is at giving the same result every time it measures the same thing.		
reproduction	Reproduction is the way different plants and animals make new plants and animals. The reproduction system differs in plants and animals.		
teenager	The age between thirteen and nineteen. The 'teen' element gives rise to the word teenager. It is a time that humans mature quite rapidly.	Important facts to know by the end of the life cycles topic: • Know the life cycle of different living things, e.g. mammal, amphibian, insect and bird. • Know the differences between different life cycles. • Know the process of reproduction in plants. • Know the process of reproduction in animals. • Create a timeline to indicate stages of growth in humans.	☐ The early years, especially the first three years of life, are very important for building the baby's brain. A child's brain develops rapidly during the first five years of life, especially the first three years. It is a time of rapid cognitive, linguistic, social, emotional and motor development.
obese	Obesity is the condition of being much too heavy for one's height so that one's health is affected. In other words, it means to be too overweight.		
toddler	Is the period that a young child starts to walk and become more independent.		
embryo	Fertilisation happens when an egg cell meets with a sperm cell and joins with it. The fertilised egg divides to form a ball of cells called an embryo.		

Year 5: Reversible and Irreversible Changes Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about Reversible and Irreversible changes
solubility	Is a chemical property referring to the ability for a given substance, the solute, to dissolve in a solvent.		☐ Irreversible changes, like burning, cannot be undone. Reversible changes, like melting and dissolving, can be changed back again.
conductivity	Conductivity defines a material's ability to conduct electricity.		
transparency	In general, transparency is the quality of being easily seen through.	Important facts to know by the end of the reversible and irreversible changes topic: • Know what a reversible change means. • Know what an irreversible change means. • Give examples of reversible and irreversible changes. • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	☐ Mixtures can be separated out by methods like filtering and evaporating. A change is called irreversible if it cannot be changed back again.
thermal evaporation	Something that is thermal is hot, retains heat, or has a warming effect. Evaporation is the process of a substance in a liquid state changing to a gaseous state due to an increase in temperature and/or pressure.		
dissolve	To dissolve is defined as to become broken up or absorbed by something or to disappear into something else.		
bicarbonate of soda	A white water-soluble powder, used chiefly as an antacid, a fire extinguisher, and a leavening agent in baking.		
thermal	Something that is thermal is hot, retains heat, or has a warming effect.		
filtering	To filter a substance means to pass it through a device which is designed to remove certain particles contained within.		
melting	Melting is a physical process that results in the transition of a substance from a solid to a liquid.		
separate	Separate, part, and divide mean to break into parts or to keep apart.	☐ A cooked egg cannot be changed back to a raw egg again. Mixing substances can cause an irreversible change. For example, when vinegar and bicarbonate of soda are mixed, the mixture changes and lots of bubbles of carbon dioxide are made. Burning is an example of an irreversible change.	

Year 6: Circulatory System Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about the circulatory system
blood vessels	Blood vessels are a series of tubes inside your body. They move blood to and from your heart.		☐ Your heart will beat about 115,000 times each day. Your heart pumps about 2,000 gallons of blood every day.
drugs	A drug is a chemical that is not food and that affects your body. Some drugs are given to people by doctors to make them healthy.		
atria	The atria are the two uppermost chambers of the heart. Blood is pushed from the atria to the ventricles.		☐ The entire trip around your body only takes blood about 20 seconds in total. Blood is what is used to transport oxygen, waste, nutrients, and more throughout the body.
William Harvey	He was the first person to accurately describe the function of the heart and the circulation of blood around the body.		
cardiovascular	The blood circulatory system (cardiovascular system) delivers nutrients and oxygen to all cells in the body.	Important facts to know by the end of the circulatory system topic: • Identify and name the main parts of the human circulatory system. • Know the function of the heart, blood vessels and blood. • Know the impact of diet, exercise, drugs and lifestyle on health. • Know the ways in which nutrients and water are transported in animals, including humans. • Know who William Harvey was.	☐ The circulatory system includes the heart, blood vessels and blood, and is vital for fighting diseases and maintaining proper temperature.
ultrasound	An ultrasound machine uses sound waves to take pictures of the inside of the body.		
cardiologists	A cardiologist is a doctor with special training and skill in finding, treating and preventing diseases of the heart and blood vessels.		☐ Because your heart is crucial to your survival, it's important to keep it healthy with a well-balanced diet and exercise, and avoiding things that can damage it, like smoking.
capillaries	Capillaries are very thin blood vessels. They bring nutrients and oxygen to tissues and remove waste products.		
pulse	Your heart has to push so much blood through your body that you can feel a little thump in your arteries each time the heart beats.		☐ Your heart affects every part of your body. That also means that diet, lifestyle, and your emotional well-being can affect your heart.
ventricles	The ventricles are the two lower chambers in the heart.		

Year 6: Animal Classification Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about Classification of animals
micro-organism	Micro-organisms are tiny. They are so small they can only be seen with a microscope.		☐ The largest vertebrate is the blue whale, which can grow to 25m long and weighs 140,000kg.
vertebrates	A vertebrate animal is one that has a backbone.		☐ The smallest vertebrate is thought to be a tiny frog called the Paedophryne amauensis. It only grows to about 8mm in length.
invertebrates	An invertebrate animal does not have a backbone and 97% of creatures belong to this group.		☐ Vertebrates tend to be much more intelligent than invertebrates.
species	This is the grouping together of similar types of plants, animals and other organisms that can reproduce with each other.		☐ Vertebrate animals can be either warm or cold-blooded. A cold-blooded animal cannot maintain a constant body temperature. The temperature of their body is determined by the outside surroundings.
fungi	Fungi are a classification or group of living organisms. This means they are not animals, plants, or bacteria.		☐ An invertebrate is an animal that does not have a backbone. 97% of all animal species are invertebrates.
monera	The whole organism is made up of just one cell. This cell is more basic than cells of other organisms.		☐ Frogs can breathe through their skin.
bacteria	Bacteria are tiny little organisms that are everywhere around us.	Important facts to know by the end of the classification of animals topic: • Be able to classify living things into broad groups according to observable characteristics and based on similarities and differences. • Know how living things have been classified. • Give reasons for classifying plants and animals based on specific characteristics.	☐ There are a wide variety of interesting ocean animals that are invertebrates. These include sponges, corals, jellyfish, anemones, and starfish.
protista	Protists are not animals, plants, fungi, or bacteria. Many protists are so small that people can see them only through a microscope.		
algae	Algae is a single or multi-cellular organism that has no roots, stems or leaves and is often found in water.		
Carl Linnaeus	Carl Linnaeus is famous for his work in Taxonomy, the science of identifying, naming and classifying organisms (plants, animals, bacteria, fungi etc.).		

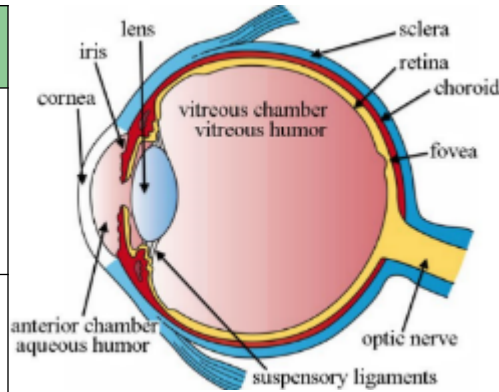
Year 6: Electricity Knowledge Mat

Subject Specific Vocabulary		Electrical symbols	Sticky Knowledge about Electricity																								
conductor	Some materials let electricity pass through them easily. These materials are known as electrical conductors.	<table><tr><th>Component</th><th>Symbol</th><th>Purpose</th></tr><tr><td>Cell (Battery)</td><td></td><td>Provides electrical energy</td></tr><tr><td>Power supply</td><td></td><td>Alternative to using cells</td></tr><tr><td>Wire</td><td></td><td>Allows current to travel</td></tr><tr><td>Bulb/light</td><td></td><td>Converts electrical energy into heat and light</td></tr><tr><td>Motor</td><td></td><td>Converts electrical energy into movement energy</td></tr><tr><td>Buzzer</td><td></td><td>Converts electrical energy into sound energy</td></tr><tr><td>Switch</td><td></td><td>Allows circuit to be opened or closed</td></tr></table>	Component	Symbol	Purpose	Cell (Battery)		Provides electrical energy	Power supply		Alternative to using cells	Wire		Allows current to travel	Bulb/light		Converts electrical energy into heat and light	Motor		Converts electrical energy into movement energy	Buzzer		Converts electrical energy into sound energy	Switch		Allows circuit to be opened or closed	☐ Electricity travels at the speed of light. That's more than 186,000 miles per second!
Component	Symbol		Purpose																								
Cell (Battery)			Provides electrical energy																								
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Switch		Allows circuit to be opened or closed																									
insulator	Plastic, wood, glass and rubber are good electrical insulators.	☐ Electricity comes from the power station, the wind, the sun, water and even an animal's poo!																									
socket	A socket is a safe device to plug your electrical items into at home. Almost every room at home will have at least one socket.	☐ Electricity is a type of energy that builds up in one place (static), or flows from one place to another (current electricity).																									
series circuits	A series circuit is one that has more than one resistor, but only one path through which the electricity (electrons) flows.	☐ Coal is the biggest source of energy for producing electricity. Coal is burned in furnaces that boil water and create steam. ☐ A popular way of generating electricity is through hydropower. This is a process where electricity is made by water which spins turbines attached to generators. ☐ A bolt of lightning can measure up to 3,000,000 volts, and lasts less than one second! ☐ Electric fields work in a similar way to gravity. Whereas gravity always attracts, electric fields can either attract or repulse.																									
cells	An electrical cell is a device that is used to generate electricity, or one that is used to make chemical reactions possible by applying electricity.																										
volts	Voltage is an electrical potential difference, the difference in electric potential between two places.																										
generator	A machine that converts energy into electricity.																										
turbine	A machine that creates continuous power in which a wheel, or something similar, moves round and round by fast moving water, steam, gas or air.																										
fuses	These are safety devices. A fuse is a strip of wire that melts and breaks an electric circuit if it goes over a safe level.																										
Thomas Edison	He was a great inventor that came up with a way of making the electric light bulb accessible for homes, industry and outside in the streets.	Important facts to know by the end of the electricity topic: • Know that the brightness of a bulb is associated with the voltage. • Compare and give reasons for variations in how components function. • Use recognised symbols when representing a simple circuit in a diagram. • Construct simple series circuits. • Be able to answer questions about what happens when they try different components, for example; switches, bulbs, buzzers and motors.																									

Year 6: Light Knowledge Mat

Subject Specific Vocabulary

light wave	One of the characteristics of light is that it behaves like a wave. Light can be defined by its wavelength and frequency. The frequency is how fast the waves vibrate up and down.
light source	Light, or illumination, is a form of energy that travels in waves, like sound. You can find different sources of light, such as a candle or the sun.
concave	Is a lens that curves inwards and reflects light differently as a result.
convex	Is a lens that curves outwards and reflects light differently as a result.
filters	A filter is a transparent material that absorbs some colours and allows others to pass through.
lens	A lens is a curved piece of glass or plastic designed to refract light in a specific way.
retina	The retina is at the back of your eye and it has light-sensitive cells called rods and cones.
cornea	The cornea is thin, clear and covers your eye. It's important because it helps you see by focusing light as it enters the eye.
iris	By opening and closing the pupil, the iris can control the amount of light that enters the eye.
pupil	The pupil can be compared with the shutter of a camera. It is surrounded by the iris which is the coloured part of the eye.



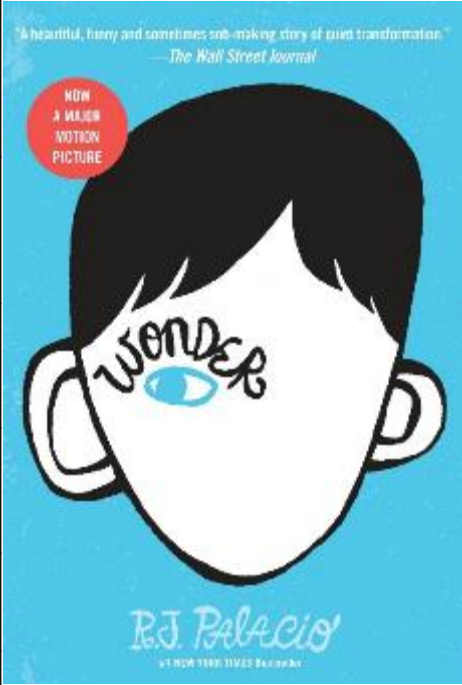
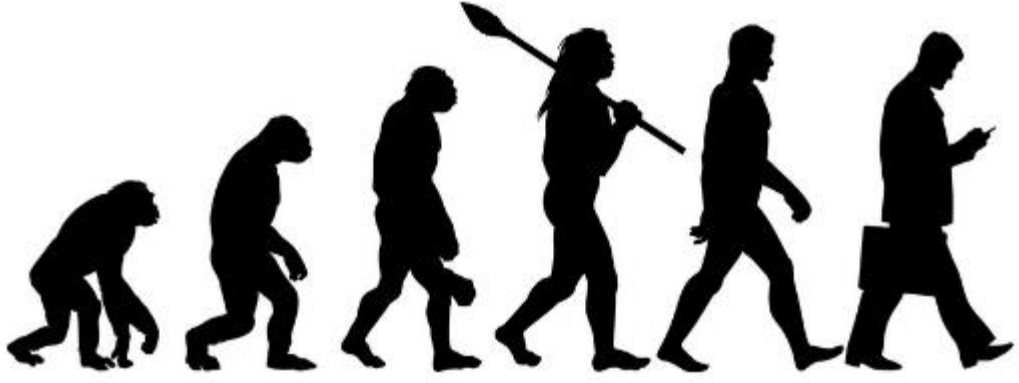
Important facts to know by the end of the light topic:

- Know that light travels in straight lines.
- Understand that because light travels in straight lines objects are seen because they give out or reflect light into the eye.
- Know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- Know that light travels in straight lines and therefore shadows have the same shape as the objects that cast them.

Sticky Knowledge about Light

- ☐ Light will travel in a completely straight line until it hits an object that will reflect it.
- ☐ Space does not have any light. We can see things in space due to light bouncing off of the objects in space.
- ☐ Light doesn't travel as fast when it has to pass through mediums that are different, such as air, water or glass.
- ☐ The light that we see from the sun actually left the sun ten minutes before we see it.
- ☐ Light can be controlled and produced in so many ways. A camera can control the amount of light that comes into the camera lens. We also use light in televisions, medical systems, copy machines, telescopes and satellites.
- ☐ Light is used by plants to convert the light into energy as their 'food'. The process is called 'photosynthesis' and converts carbon dioxide through the energy of the light.

Year 6: Evolution & Inheritance Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about evolution & inheritance
off-spring	When living things reproduce they pass on characteristics to their offspring. All living things produce offspring of the same kind, but normally offspring are not identical to their parents		☐ Evolution is a scientific theory used by biologists. It explains how living things changed over a long time, and how they have come to be the way they are.
adaptation	Adaptation is the process by which animals, plants and other living things have changed so that they better suit their habitat.		☐ We know that living things have changed over time, because we can see their remains in the rocks.
evolution	Evolution is the theory that all the kinds of living things that exist today developed from earlier types.		☐ We know that the animals and plants of today are different from those of long ago.
inheritance	When living things reproduce they pass on characteristics to their offspring. This is known as inheritance.		☐ Evolutionary questions are still being actively researched by biologists.
palaeontologist	A palaeontologist is someone studying the life of past geological periods, as known from fossil remains.		
Charles Darwin	Charles Darwin was an English scientist who studied nature. He is known for his theory of evolution.		
genes	Genes that are passed on to you determine many of your traits, such as your hair colour and skin colour.		
chromosomes	Chromosomes are tiny structures inside cells made from DNA and protein.		
syndrome	A syndrome is a genetic condition which can affect learning and physical features.		
genotype	A genotype refers to a particular gene or set of genes carried by an individual.		