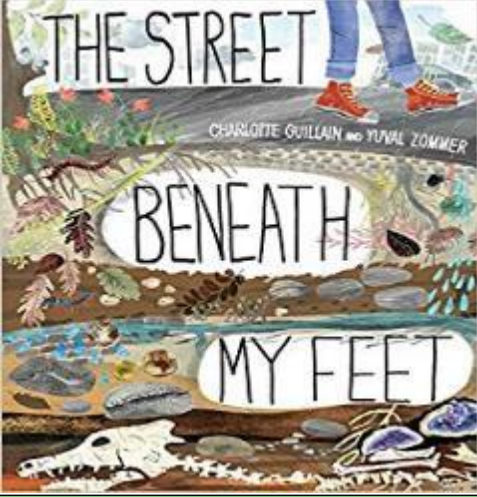




# Year 3: Skeleton and Muscles Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about our skeleton and muscles
<b>nutrition</b>	Nutrition involves drinking enough water and eating the right amount of items from the four main food groups.		<input type="checkbox"/> The spine is made up of 33 bones and the smallest bone is found in our ear.
<b>skeleton</b>	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.		<input type="checkbox"/> Muscles make up 40% of our total body weight and the smallest muscle is found in our ears.
<b>muscles</b>	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.	<b>Important facts to know by the end of the skeleton and muscle topic:</b> <ul style="list-style-type: none"> <li>• <b>That humans cannot make their own food. They get their nutrition from what they eat.</b></li> <li>• <b>That humans have skeletons and muscles for support, protection and movement.</b></li> <li>• <b>Know that the body parts have special functions.</b></li> <li>• <b>Know the names of the body parts associated with skeleton and muscles.</b></li> <li>• <b>Compare the diets of different groups of animals, including humans.</b></li> <li>• <b>Know what a healthy meal looks like.</b></li> </ul>	<input type="checkbox"/> 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.
<b>diet</b>	Our bodies need a balanced diet to work properly. This involves drinking enough water and eating healthily.		<input type="checkbox"/> When broken our bones will repair themselves. Doctors use casts or splits to make sure they grow back straight.
<b>joint</b>	Joints allow the body to make movements. The body has many bones and are connected through the joints.		<input type="checkbox"/> The longest bone in the human body is the thigh bone called the femur.
<b>pelvis</b>	The pelvis is a bony cradle-shaped structure located at the base of the spine.		<input type="checkbox"/> Bone marrow makes up 4% of a human body mass. It produces red blood cells which carry oxygen all around the body.
<b>cartilage</b>	Cartilage is a connective tissue found in many areas of the body including joints between bones e.g. the elbows, knees and ankles.		
<b>rib cage</b>	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.		
<b>tendon</b>	Muscles are attached to the bone by tendons and work in pairs to allow for smooth movement.		
<b>spine</b>	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
<b>fossil</b>	A fossil is the preserved remains or traces of a dead organism.		<input type="checkbox"/> Rocks have been used by humans for millions of years, from early tools and weapons through to construction materials for modern buildings.
<b>soil</b>	Soil consists of a mix of organic material (decayed plants and animals) and broken bits of rocks and minerals.		<input type="checkbox"/> Sediment deposited over time, often as layers at the bottom of lakes and oceans, forms sedimentary rocks.
<b>crystals</b>	Crystals are a special kind of solid material where the molecules fit together in a repeating pattern.	<b>Important facts to know by the end of the rocks and magnets topic:</b> <ul style="list-style-type: none"> <li>• Know how fossils are formed.</li> <li>• Know what soil is.</li> <li>• Know that magnets attract some objects but not others.</li> <li>• Know the difference between igneous, sedimentary and metamorphic rocks.</li> <li>• Predict whether two magnets will attract or repel each other.</li> <li>• Know that magnets have two poles.</li> <li>• Group together different rocks according to different attributes.</li> </ul>	<input type="checkbox"/> Extreme pressure and heat over time forms metamorphic rocks. Examples are marble and slate.
<b>sedimentary</b>	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.		<input type="checkbox"/> When magma cools and solidifies it forms igneous rock. Examples are granite and pumice.
<b>metamorphic</b>	When a rock experiences heat and pressure, it becomes a metamorphic rock. All metamorphic rocks start as another type of rock.		<input type="checkbox"/> The Earth is a very big magnet. Its North and South poles are highly magnetic.
<b>igneous</b>	Igneous rock is formed when magma cools and solidifies. It may do this above or below the Earth's surface.		<input type="checkbox"/> A magnet always has north and south poles. Cutting a magnet in half makes two magnets, each with two poles.
<b>magnetic pole</b>	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.		<input type="checkbox"/> Magnets only attract certain types of metals, other materials such as glass, plastic and wood aren't attracted.
<b>organic matter</b>	Organic matter is matter that has come from a recently living organism. It is capable of decaying.		
<b>attract and repel</b>	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.		

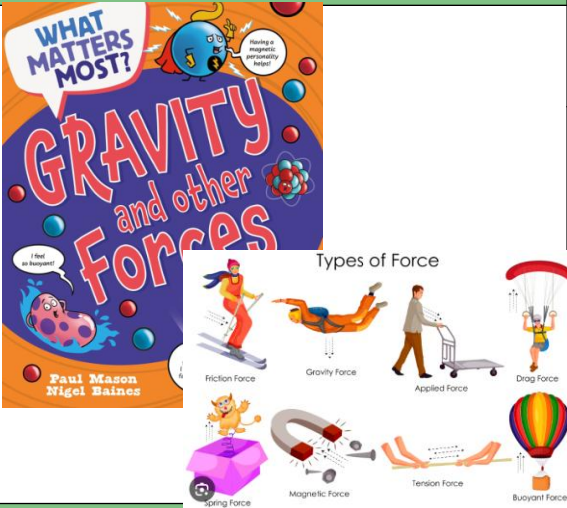
# Year 3: Light and Dark Knowledge Mat

Subject Specific Vocabulary		Interesting Books	Sticky Knowledge about light and dark	
<b>reflection</b>	A reflection occurs when a ray of light hits a surface and bounces off.	 	<input type="checkbox"/> Black and dark objects absorb light and heat whilst white or light objects reflect it.	
<b>shadows</b>	A shadow is formed when an object blocks out the light. The object must be opaque or translucent to make a shadow.		<input type="checkbox"/> Some objects like glass are transparent which means that light can shine through them.	
<b>light source</b>	The main light source for Earth is the Sun. Some other luminous objects give out light, for example, torches, candles and lamps.		<input type="checkbox"/> Our main source of light on Earth comes from the Sun. A ray of light travels very fast.	
<b>opaque</b>	Opaque objects do not allow light to pass through them, in most cases creating a shadow.		<input type="checkbox"/> Darkness is made by blocking light from the sun or some other source of light, which makes shadows.	
<b>refraction</b>	It is the change of direction of a light ray as it passes through different surfaces, for example, from air to water.		<b>Important facts to know by the end of the light and dark topic</b>	<input type="checkbox"/> The Sun and other stars, fires, torches and lamps all make their own light and so are examples of sources of light.
<b>periscope</b>	A periscope is an instrument people use to look at things from a hidden position.			<input type="checkbox"/> 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.
<b>nocturnal</b>	If something is nocturnal, it belongs to or is active at night. For example, bats and owls.		<ul style="list-style-type: none"> <li>• What dark is (in relation to absence of light).</li> <li>• Know that we need light so we can see things.</li> <li>• Know that light can be reflected.</li> <li>• Know how a shadow is formed.</li> <li>• Understand why shadows change shape.</li> <li>• Know the dangers of looking directly at the Sun.</li> <li>• Know how to protect oneself from direct sunlight.</li> </ul>	<input type="checkbox"/> 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.
<b>orbits</b>	An orbit is a repeating path that one celestial body takes around another.			
<b>convex</b>	Convex lenses, also called positive lenses, are lenses that curve outward from the edges to the centre.			
<b>concave</b>	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
<b>roots</b>	The root is the part of a plant that typically lies below the surface of the soil.		<input type="checkbox"/> Trees are more than just part of our natural landscape. They provide shelter and food for wildlife.
<b>stem</b>	The stem is the plant axis that bears buds and shoots with leaves.		<input type="checkbox"/> Trees absorb carbon dioxide and produce breathable air.
<b>nutrients</b>	Nutrients are the food the plant wants. Most of the plant's nutrients comes from the soil.	<b>Important facts to know by the end of the plant topic</b>	<input type="checkbox"/> A large tree can consume 100 gallons of water out of the ground in one day.
<b>pollination</b>	Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma.		<input type="checkbox"/> Not only do trees provide shade in the summer, but they serve as a windbreak in the winter too.
<b>seed dispersal</b>	Seed dispersal is the movement or transport of seeds away from the parent plant.	<input type="checkbox"/> Know the function of the different parts of the flowering plant. <input type="checkbox"/> Identify and know the names of: stem; roots; leaves and flowers. <input type="checkbox"/> Know what a plant needs to grow. <input type="checkbox"/> Know that light, air, water, nutrients from soil are all important for plant growth. <input type="checkbox"/> Find out how water is transported within a plant. <input type="checkbox"/> Know the part that flowers play in the life cycle of a flowering plant. <input type="checkbox"/> Know about pollination, seed formation and seed dispersal.	<input type="checkbox"/> The oldest known living tree is 4,800 years old.
<b>fertiliser</b>	Fertilisers are used to increase the rate of a plant's growth.		<input type="checkbox"/> Trees are able to communicate and defend themselves against attacking insects.
<b>seed formation</b>	A seed is a small baby plant enclosed in a covering called the seed coat, usually with some stored food.		<input type="checkbox"/> Several centuries ago in Holland, tulips were more valuable than gold.
<b>stigma</b>	The stigma is usually sticky and receives pollen.		<input type="checkbox"/> Some plants such as orchids do not need soil to grow-they get all of their nutrients from the air.
<b>anther</b>	The stamen has a pollen producing structure at the end which is called the anther.		<input type="checkbox"/> Broccoli is actually a flower.
<b>soil</b>	The soil has water and nutrients that a plant needs to grow healthily.		

# Year 3: Forces and Magnets Knowledge Mat

Subject Specific Vocabulary		Interesting Book	Sticky Knowledge about our rocks and magnets
<b>Rough</b>	uneven, not smooth		<input type="checkbox"/> can recognise that wind can also provide a contact force to move objects
<b>Pendulum</b>	a weight hanging from a fixed point which swings backwards and forwards		<input type="checkbox"/> Magnets have a north and a south pole. Unlike poles attract and like poles repel each other.
<b>Pull/pulling</b>	(verb) to move toward/(noun) a move toward		<input type="checkbox"/> Some metals are attracted to a magnet and are known as 'magnetic'. Other materials are not.
<b>Slide</b>	to slip		<ul style="list-style-type: none"> <li>The strength of magnets varies and can be tested using the idea that magnetic forces act at a distance.</li> </ul> <b>Children do not need to use the word 'friction' as this will be introduced in Year 5.</b>
<b>Smooth</b>	flat and even, not rough		<input type="checkbox"/> The Earth is a very big magnet. Its North and South poles are highly magnetic.
<b>Surface</b>	the outside or top of something		<input type="checkbox"/> A magnet always has north and south poles. Cutting a magnet in half makes two magnets, each with two poles.
<b>magnetic pole</b>	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.		<input type="checkbox"/> Magnets only attract certain types of metals, other materials such as glass, plastic and wood aren't attracted.
<b>organic matter</b>	Organic matter is matter that has come from a recently living organism. It is capable of decaying.		
<b>attract and repel</b>	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:

- Predict whether two magnets will attract or repel each other.
- Know that magnets have two poles.
- Group together different rocks according to different attributes.
- can state that magnetic materials are attracted to a magnet; that only some metals are magnetic; and that a magnet can be used to check for attraction between the magnet and the material
- identifies the direction in which the object is moving as a result of the force