St. George's CE First School and Nursery

Long Term Planning
Science
Year Three

INTENT	IMPLEMENTATION
Our children work scientifically by: - investigating - enquiring - experimenting	We map the National Curriculum content onto each half term and deliver Science lessons though our own pathway. Science lessons are practical and relatable to real-life.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Animals, including humans	Rocks	Forces	Animals, including humans	Light	Plants
Overview	Pupils should continue to learn about the importance of nutrition.	Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.	Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe).	Pupils should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.	Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.	Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.
Knowledge	**(PZAZ 3.1)** To know the different food groups and how they keep us healthy. **The main food groups (carbohydrates, protein, fats, fibre, vitamins, minerals and water) and their simple functions.** To know what food groups our food contain **a balanced diet should include all food groups.** **Children investigate what is in their food**	**(PZAZ 3.4)** To know and identify the different types of rock and their properties. **Group different types of rock according to observation,** **Vocab -** Sedimentary, Igneous, Metamorphic, Characteristic, Geology, Geologist, Lava, Solidify **(PZAZ 3.5)** To describe how sedimentary/metamorphic rocks are formed. **Sandstone, Mudstone (chalk) & Limestone** **Children give examples and describe their features.**	To know how things move because of different forces. pushes and pulls involve contact. Moving on different surfaces - BBC Bitesize **Vocabulary** **Force, push, pull, theory, Children investigate pushing and pulling**	**(PZAZ 3.2)** To know the main body parts associated with the skeleton. **Vertebrae means backbone or spine. Bones are strong and light. Dairy foods make bones strong and healthy.** **Label skeleton, skull, ribcage, pelvis, femur** **Vocab - Vertebrate, invertebrate, skull, fibula, tibia, scapula, radius, humerus, pelvis, clavicle, spine ribcage, femur, ulna** **(PZAZ 3.3)**	**(PZAZ 3.11)** To know that darkness is the absence of light. To know that light travels in straight lines (Law of Reflection) To know what happens when light reflects off different surfaces. Children understand that the sun can be dangerous and investigate materials to make sunglasses	To know, identify and describe the functions of different parts of flowering plants. **Recap parts of flower** **(PZAZ 3.13/3.15)** To know and investigate the way in which water is transported within plants. **Children know what roots look like and their function.** **(PZAZ 3.14)**

	To design a healthy lunch box **Revisit** Herbivore, carnivore and omnivore	**Test Porosity of rocks.** **Make a metamorphic rock?** **(PZAZ 3.6)** To know and describe how igneous rocks are formed. **Know, describe and give features** **(PZAZ 3.7)** Fossils - BBC Bitesize To know how fossils are formed and what they can teach us about the past. Children know why fossils are only found in sedimentary rocks. Children draw cartoon to show process of a fossil being formed. **(PZAZ 3.8)** **To know how soil is formed.** **Children know what soil is made up of.** **Children learn about the Horizons of soil (Humus, topsoil, subsoil, eolith)** To know and investigate how soils can be different. **Children investigate the drainage of different soils.**	**(PZAZ 3.9)** To know and investigate how different surfaces affect how things move. **Friction** ***Which surface will the car travel further on & why?*** **(grass, gravel, sand, tarmac)** **Vocab - friction, surface,** **fair test** **(PZAZ 3.10)** To know what materials are and are not magnetic. **Magnetism is a force which does not require contact.** **magnetic forces can act at a distance and attract some materials and not others** **Investigate magnetic and non-magnetic materials.** **Vocab – contact, non-contact, magnetic force, metal, not metal** To know how to compare the strengths of magnets. To know how and why magnets attract and repel.	To know the main body parts associated with muscles. **Where two bones meet is a joint. We need these to move. (hinge, ball and socket,** **Biceps, triceps (describe how muscles work)** To know and group different animals with and without skeletons **Vertebrate/invertebrate** **Mammals, birds, reptiles, amphibians, fish, jellyfish, worm, butterfly, spider, human.** To know what would happen if we didn't have a skeleton. **(protect organs, move and stay upright)**	**(PZAZ 3.12)** To know how shadows are formed and how they can change. **Shadows formed when light is blocked by an object.** **I know how to describe objects in terms of how light passes through them.** **Opaque, transparent, translucent** Children design and make shadow puppets to investigate making their shadows smaller, bigger, faint and dark.	To know the function of the leaves of a plant. **Children learn the role of the Stomata, and why leaves are different.** **(PZAZ 3.16)** To know and explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **(PZAZ 3.17 & 3.18)** To know and explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. **Plants which grow in** **Investigate what happens if a plant is deprived of water, light, soil, heat, space**
Skills Pupils work scientifically by:	They might compare the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us	Observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time. Using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.	Comparing how different things move and grouping them. Raising questions and carrying out tests to find out how far things move on different surfaces and gathering and recording data to	Identifying and grouping animals with and without skeletons and observing and comparing their movement. Exploring ideas about what would happen if humans did not have skeletons.	Looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.	Comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser. Discovering how seeds are formed by observing the different stages of plant life

	healthy and design meals based on what they find out.	Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed	find answers their questions. Exploring the strengths of different magnets and finding a fair way to compare them. Sorting materials into those that are magnetic and those that are not. Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another. Identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.			cycles over a period of time. Looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.
Prior Learning	To know and describe the importance for humans of exercise. **You also need to make sure you exercise regularly to keep your heart (pumps blood and oxygen around body to muscles), lungs (to carry oxygen into blood to help burn food into energy) and muscles strong and healthy.** To know the different food groups. **Carbohydrates, protein, fruits, vegetables, dairy, fats, oils** To know and describe the importance for humans to eat the right amounts of different types of food	New Unit	New Unit	New Unit	New Unit	To know the life cycle of a plant. **Life-cycle seed bulb bud sapling growth, germinate** To know and observe and describe how seeds and bulbs grow into mature plants. To know and find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. **Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them**

	To know and describe the importance for humans of hygiene. **Teeth** **Washing** **Catch It Kill It Bin It** **Food preparation**					