Norwich Road Academy – Long Term Plan for Science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**All about me** Autumn, leaves changing colour and falling from trees. Animals begin to prepare for colder weather and hibernation e.g. squirrels bury nuts in the ground. Temperatures getting colder as winter approaches. Our bodies Features of our body Senses	**Journeys** Plan a journey to the local park, or around the school grounds. What would we see? What grows in school, what grows in the park? People journey around the world to see different places and environments; Ernest Shakleton and his journey to the south pole. Contrasting environments; journeys to cold places what would we need to take with us? Look at some recent memorable journeys, e.g. Perseverance - landing on Mars. (children will learn more about Space in Reception) Shadows Light/dark Fast/slow experiments	**Dinosaurs** We know about dinosaurs because people have found fossils in the ground. Rocks can sometimes contain fossils that Palaeontologist can study. Dinosaur life cycle Fossils and rocks exploration Human life cycle	**Growing and changing** Plants need water and light to grow (this will be built upon throughout the curriculum). Grow plants in nursery and observe plants growing e.g. sunflowers, cress etc. Talk about how the plants change as they grow. Make observations of the world around them, describe things they have seen e.g. plants, animals, natural objects and manmade objects. Recognise the season of Spring and notice new plants growing. Animals grow and change in many different ways. Chick life cycle – egg in incubator Egg experiment in vinegar How a plant grows	**Animals and their babies** All animals have babies, some look like their parents, but some do not. Recognise and use animals names e.g. cow/calf, chicken/chick Polar habitats are under threat as climate changes. Butterfly life cycle Learn that animals reproduce and have babies Similarities and differences in animals and their babies	**Heroes and adventurers** Ice investigation (link to South Pole – Shakleton). Ice changes from a solid to a liquid when it melts. Boats in water – explore floating and sinking. How many pennies can ca boat hold? Contrasting landscapes.; what does a lunar landscape look like? What might we see if we walked on the moon? Observe changes in our bodies How we travel in space

				Plant lifecycle Seasons		
Reception	**All About Me** The human body: Facial features, body parts, the senses. <u>Seasons of the year</u>; Autumn. Deciduous and evergreen trees. Observing leaves using magnifying glasses, leaves changing colour.	**(Transport)** Forces – Push and Pull and Twist Air transport, Water transport <u>Seasons of the year</u>: Animal hibernation, why do some animals hibernate? How do other animals survive the winter? Autumn/Winter. Transport in the winter; snow ploughs, gritting roads, snow tyres.	**Space** Our planet Earth, land and sea, plants and animals, weather, gravity. The moon, the sun, the planets in our solar system, space travel, astronauts. <u>Seasons of the year</u>: Winter - Changing state of matter; frost and ice- looking closely at ice, what happens when it warms? Why can we see our breath when it is cold?	**Growing and Changing** Growing and changing; how people change as they grow, how animals change as they grow. Life cycles of a butterfly/ frog. Identify animals and their babies. Plants; how they grow from seeds and bulbs. What plants need to grow. Identify parts of plants including roots, stem and leaves. Identify trees and plants growing locally on the school grounds or in local parks. Draw pictures of local plants. <u>Season of the year</u> – Spring – The first signs of Spring, snowdrops, cherry blossom, buds and flowers, birds nesting, bees, lighter evenings	**(Kings and Queens)** <u>Seasons of the Year</u>: Summer. Signs of summer; flowers, warmer days, light evenings, butterflies, bees, birds. Design a garden for the Queen; what could we grow? What would we include? Sketch some ideas and write about the design.	**(Stories from the Past)** <u>Seasons of the Year</u>: Summer. How we stay safe in the Sun; sunscreen, hats, sunglasses. Safety around water. Changing state of matter; Why do our ice lollies melt?

Year 1	**The Human Body** 1. Introduction to Our Body and Our Senses 2. Eyes and Sight 3. Ears and Hearing 4. Touch, taste and smell 5. Understanding Sensory Impairment 6. Assessment	**Seasons and Weather** 1. The four seasons 2. Tools to record the weather 3. Using a graph to show information about the weather 4. Clouds and what they tell us: cirrus, cumulus and stratus 5. Weather forecasting 6. Dangerous weather around the world 7. Assessment task: Identifying and describing weather	**Animals and Their Needs** 1. Amazing Animals (Introduction to Animals) 2. Grouping animals: Fish, amphibians, reptiles, birds and mammals 3. Grouping animals: carnivores, herbivores and omnivores 4. Animals as pets 5. Describing animals 6. Assessment	**Taking Care of the Earth** 1. Taking Care of the Earth 2. Earth's Natural Resources 3. Logging 4. Pollution 5. Recycling 6. Assessment	**Plants** 1. What plants need 2. Parts of plants 3. Seeds 4. Deciduous and evergreen plants 5. Plants we eat 6. Assessment	**Materials and Magnets** 1. Everyday Materials 2. Properties of Materials 3. Uses of Materials 4. Magnets 5. Investigation 6. Assessment
Year 2	**The Human Body** 1 – Animals (including humans) survival and offspring 2 – The skeletal and muscular systems 3 – The digestive system 4 – The circulatory system 5 – Germs and diseases 6 - Assessment	**Living things and their habitats** 1 – 'Dead or Alive?' 2 – What is a habitat? 3 – Rainforest and desert habitats 4 – Meadow habitats 5 – Underground habitats 6 - Assessment	**Astronomy** 1 – Introduction to astronomy 2 – Model the Solar System 3 – Orbit and rotation 4 – The Moon and its phases 5 – Constellations 6 - Assessment	**Materials and matter** 1 – Materials and their uses 2 – George de Mestral and Velcro 3 – Matter under the microscope 4 – Changing solid objects 5 – Liquids and their properties 6 - Assessment	**Plants** 1 – Plants around us 2 – Seeds and bulbs 3 and 4 – A comparative test (The effects of light and water on a plant) 5 – Food and farming 6 - Assessment	**Electricity** 1 - Introduction to electricity 2 – Safety 3 and 4 – Exploring circuits (constructing a working circuit 5 – Investigating conductive and non-conductive materials 6 - Assessment
Year 3	**The Human Body** 1. The Muscular System	**Rocks** 1. Sorting rocks	**Light** 1. Light and Dark	**Forces and Magnets** 1. Forces (Gravity) 2. Friction	**Plants** 1. Botany and Flowering Plants	**Cycles in Nature** 1. The Four Seasons (prior learning)

	2. The Skeletal System 3. The Nervous System 4. Preparing to Eat 5. The Digestive System 6. Assessment	2. How Rocks are Formed 3. Permeability 4. Fossils 5. Soil 6. Assessment	2. Transparent and Opaque Surfaces 3. Mirrors and Reflection 4. Part 1—Shadows 5. Part 2—Finding Patterns in Changing Shadows 6. Assessment	3. Magnet 4. Magnetic Poles and Fields 5. Investigating the strength of magnets 6. Assessment	2. Requirements for Life and Growth 3. Water Transportation in Plants 4. Pollination in Flowering Plants 5. Seed Dispersal 6. Assessment 7. George Washington Carver	2. Seasonal Cycles in Plants 3. Life Cycle of a Plant 4. Animal Migration 5. Life Cycle of a Frog 6. Assessment
Year 4	**The Human Body** 1. Cells and Nutrients 2. Teeth and Senses 3. Digestion 4. A Healthy Diet 5. Vitamins and Minerals 6. Assessment	**The Water Cycle** 1. States of Matter 2. Evaporation 3. Condensation 4. Precipitation 5. The Water Cycle 6. Assessment: The Water Cycle	**Sound** 1. What is sound? 2. Speed of sound 3. Qualities of sound—Pitch and Volume 4. Human Voice 5. Ears– How we Hear 6. Assessment	**Ecology** 1. Living Things and Habitats 2. Natural Cycles 3. Web of Living Things 4. Air Pollution—A Human Threat to the Environment 5. Ecology in our Local Areas 6. Assessment	**Classification of Plants and Animals** 1. Introduction to classification 2. Classes of vertebrates: Fish and Amphibians 3. Classes of vertebrates: Reptiles, Birds and Mammals 4. Classes of invertebrates: Insects, Arachnids and Molluscs 5. Classification of plants 6. Assessment	**Electricity** 1. Electrical Safety 2. Parts of a circuit 3. Switches 4. Thomas Edison and Lewis Latimer 5. Investigating conductive and non-conductive materials 6. Assessment
Year 5/6	**The Human Body** 1. The Heart: Circulation of the Blood 2. Blood Vessels and Transport	**Light** 1. How Light Travels 2. How We See 3. Shadows and Their Shapes	**Electricity** 1.Switches 2.Simple Series Circuits 3. Voltage	**Evolution** 1. Fossils and Mary Anning 2. Inheritance 3. Adaptation 4. Charles Darwin	**Classification of Living Things** 1. Classifying organisms 2. Cells: Plant and Animal cells	**Reproduction** 1. Asexual reproduction 2. Sexual reproduction in non-flowering plants

	3. Blood Pressure and Heart Rate 4. Heart Rate- an Investigation 5. Heart Rate– an Investigation continued 6. Assessment 7. Optional extra lesson: components of blood	4. The Colour of Light 5. Making a Periscope 6. Assessment	4. & 5. Creating a circuit for a purpose 6. Assessment	5. Alfred Wallace 6. Assessment	3. Taxonomy 4. Vertebrates 5. Invertebrates 6. Assessment	3. Sexual reproduction in flowering plants 4. Reproduction in animals 5. Growth stages 6. Assessment