Subject: SCIENCE CLASS 4 Cycle: A

WORKING SCIENTIFICALLY SKILLS TO RUN THROUGHOUT THE YEAR:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

	PRIOR LEARNING	NATIONAL CURRICULUM OBJECTIVES	KEY VOCABULARY
AUTUMN 1	**Y4 LIVING THINGS AND THEIR HABITATS** • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	**Y6 LIVING THINGS AND THEIR HABITATS** • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics.	**Y6** Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering **Y4** Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate
AUTUMN 2	**Y3 FORCES AND MAGNETS** • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing	**Y5 FORCES** • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	**Y5** Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears **Y3** Force, push, pull, twist, contact force, non-contact force, magnetic force, attract, repel, magnetic material, poles, north pole, south pole
SPRING 1	**Y1 SEASONAL CHANGES** • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies	**Y5 EARTH AND SPACE** • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies	**Y5** Earth, Sun, Moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune Spherical, Solar system, rotates, star, orbits, planets, axis

		• use the idea of the Earth's rotation to explain day and night, and the apparent movement of the Sun across the sky.	
SPRING 2 and SUMMER 1	**Y2 ANIMALS INCLUDING HUMANS** • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **Y3 ANIMALS INCLUDING HUMANS** • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat **Y4 ANIMALS INCLUDING HUMANS** • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions	**Y6 ANIMALS INCLUDING HUMANS** • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans.	**Y6** Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle **Y4** Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain **Y3** Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints **Y2** Exercise, Heartbeat, Pulse, Breathing, Hygiene, Germs, Disease, Nutrition, Food types
SUMMER 2	**Y2 ANIMALS INCLUDING HUMANS** • notice that animals, including humans, have offspring which grow into adults	**Y5 ANIMALS INCLUDING HUMANS** • describe the changes as humans develop to old age **From National Curriculum (non-statutory)** Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.	**This is linked into PSHE curriculum and Sex education.**