Subject Area – Science **Year Group - 5**

Term	Autumn One	Autumn Two & Spring One	Spring Two	Summer One	Summer Two
Knowledge	**Forces**	**Properties and changes of materials**	**Earth and Space**	**Living things in their habitats**	**Animals including humans**
Scientific enquiry	Comparative/fair testing	Researching Comparative/fair testing	Observing over time Researching	Classifying	Pattern seeking Researching
Working scientifically skills	To ask scientific questions To gather/record results To present results To interpret results	To plan an enquiry To make a prediction To measure accurately	To observe closely To ask scientific questions	To ask scientific questions	To draw conclusions To evaluate an investigation To ask scientific questions
Building science capital	Water resistance in swimming lessons	Practical lesson activities	External visit to Science Museum? Now press play	Farmer time Planting sexual and asexual crops Learning about natural scientists (Jane Goodall, David Attenborough)	(Virtual) Visit with a nurse
Composite knowledge	What is gravity? What is air resistance? What is water resistance? What is friction? How do forces affect a mechanism? What is the effect of air resistance?	What is solubility and conductivity? How can mixtures (of different states) be separated? What are irreversible changes? How are new materials formed?	What shape are the sun, earth and moon? How does the earth and other planets move? How do we have night and day? Why does it look like the sun moves across the sky?	What is the life cycle of a mammal, amphibian, insect and bird? What are the differences between the life cycles of different animals? What is asexual reproduction in plants? What is sexual reproduction in plants? What impact do natural scientists have?	What changes does a human go through when developing into old age? How can you show human growth and development on a timeline? What is a gestation period? What differences are there between a human's gestation period and other animals? What changes are made during puberty? (SRE)
Component knowledge	-explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	-compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	-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 differences in the life cycles of a mammal, an amphibian, an insect and a bird -describe the life process of reproduction in some plants and animals	-identify changes humans make as they develop into old age. -indicate stages in human growth and development.

	-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	-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 -give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic -demonstrate that dissolving, mixing and changes of state are reversible changes -explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	-describe the sun, Earth and moon as approximately spherical bodies -use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky		-understand and explain what a gestation period is. -make clear comparisons between human and other animals gestation periods. Identify clear changes in puberty within humans (SRE)
Vocabulary	Forces, air resistance, water resistance , friction, mechanisms, pulleys, levers, gears, parachutes, sycamore seeds	Soluble, insoluble, solute, solution, solvent, irreversible/ reversible changes , conductivity, thermal and electrical insulators,	Earth, planets, solar system, moon, rotation, spherical bodies, night and day.	Mammal, amphibian, insect, bird, life cycles, asexual reproduction, sexual reproduction	Gestation period, growth, development, puberty, SRE
Links to prior knowledge	Year 3 forces and magnets	Year 1/ 2: Everyday Materials Year 4: States of matter		Year 2 Living things and their habitats Year 4 Living things and their habitats (animals and food chains)	Year 3 / SRE covered from year 1 -5 Year 1 Grouping animals Year 2 SRE Year 3 Skeletons and muscles Year 4 teeth and digestion
Key knowledge	To raise questions about the effects of air resistance.	Make comparison between materials using prior knowledge	Use a model of the sun and earth to explain day and night.	To raise questions about their local environment.	To confidently indicate stages of human growth and development

for assessment	Explore the effects of air resistances. Experience forces and their effects. Explore mechanisms that are impacted by force.	and additional knowledge of material properties. Explain how recovering a substance depends on its state of matter and properties.	Understand the sun and the eight planets (Plutos reclassification in 2006 as a ' dwarf planet').	Make suggestions for similarities and differences in life cycles Make suggestions for similarities and differences in reproduction of animals and plants.	Research and discuss the gestation periods of different animals. Make comparisons between a human's gestation period and other animals.
Cross-curricular links	Topic/DT (Making Victorian Toys with levers)	DT (sewing sustainable bags)	Literacy (Non chronological report)	SMSC and Global learning (Sustainable farming)	SMSC
Oracy & Outdoor learning	Air resistance (parachutes) and friction experiments (Cars in the mud) Debating the best material and size for a parachute	Fact run Presenting results- speech/make a video	Toilet paper to understand the scale of the solar system Now press play Present solar system Non-Chronological reports	Farming The pond to look at amphibians life cycle Debate sexual and asexual flower reproduction	Fact run/bingo Concept map SRE Discussions