PATHWAY MAP – Science Year 5					
KEY KNOWLEDGE	**Earth and space** **Movement of earth, planets and moon. Night and day**	**Forces** **Gravity, air/water resistance, friction, levers, pulleys and gears**	**Properties and changes of materials** **Dissolve, separating, reversible changes, changes that produce new materials**	**Animals (including humans)** **How humans change with age**	**Living things and their habitats** **Animal life cycles, reproduction in plants and animals**
KEY VOCABULARY	Sun, star, planet, moon, solar system, sphere/ spherical, gravity, elliptical, galaxy, universe, cycle	Force, attract, repel, in contact, at a distance, balanced, unbalanced, direction, speed/ velocity, distort	Properties, hardness, solubility, transparency, electrical conductor, thermal conductor, dissolve, solution, separating, solids, evaporation, filtering, sieving, melting, irreversible, new material, burning, rusting, magnetism	Human development, baby, toddler, child, teenager, adult, puberty, gestation, length, mass, grow, growing	Lifecycles, rainforest, oceans, desert, prehistoric, similarities, differences, mammal, amphibian, insect, bird, reptile, life processes, reproduction
PRE-ASSESSMENT TASK	'Planet Facts'- Record on a fact sheet what you know.	Teacher to act out examples of forces using objects. In groups children to draw an image and write down what they know about the action (force)	Children to identify any known materials that can change their state. Children to record on a sticky note.	Children to create their own timeline to indicate stages in the changes in the growth and development of humans.	Children to draw and describe the life cycle of - amphibians, bids, mammals, insect, plant.
END ASSESSMENT TASK	Children to prepare and deliver an 'Earth and Space' Presentation using the Green Screen. GD: Can they begin to understand how older civilizations used the sun to create astronomical clocks e.g. Stonehenge?	What were the achievements of the great scientist such as Galileo Galilei and Isaac Newton GD: What is the influence of their achievements in modern life today.	Children to write an explanation piece titled 'reversible changes'. Headings to include: evaporating, filtering, sieving, melting and dissolving (recognising that melting and dissolving are different processes). GD: Can they explore changes which are more difficult to reverse e.g. burning/rusting? (reactions such as vinegar and bicarb) GD: Can they explore work of chemists who created new materials e.g. Spencer Silver- glue on sticky notes?	Repeat the above task – expectation of deeper knowledge. GD: Research and compare the gestation period of other animals and compare them with humans.	Children to revisit and re-create the life cycles of an amphibian, bird, mammal, insect, plant. GD: Children to ask pertinent questions and suggest reasons for similarities and differences.
KEY SKILLS	• Describe the movement of the earth and 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 • Use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky	• Explain that unsupported objects fall towards earth because of the force of gravity • Identify effects of air resistance, water resistance and friction between moving surfaces • Recognise that some mechanisms allow a smaller force to have a greater effect • **Plan and carry out an enquiry to answer questions, controlling variables where necessary** • **Make predictions with reasons** • **Take repeated reading where appropriate/ use a range of scientific equipment with increased accuracy**	• Compare/group everyday materials on basis of their properties (solubility, transparency, conductivity) and response to magnets • Know that some materials dissolve in liquid to form a solution • Use knowledge to decide how mixtures might be separated through filtering, sieving and evaporating • **Present a report on their findings through writing/display/presentation** • Give reasons based on evidence from comparative and fair tests, for uses of every day materials • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that the change is usually irreversible (changes associated with burning and action of acid on bicarb of soda) • **Record more complex data and results using different representations**	• Describe differences in the life cycles of a mammal, amphibian, insect, bird • Describe life processes and reproduction in some plants/animals • Describe the changes as humans develop	• Describe differences in the life cycles of a mammal, amphibian, insect, bird • Describe life processes and reproduction in some plants/animals • Describe the changes as humans develop
RESOURCES AVAILABLE	Outstanding science- unit 5D	Outstanding science- unit 5E	Outstanding science- unit 5C	Outstanding science- unit 5B	Outstanding science- unit 5A