Progression mapping of knowledge and skills in Science at St Peter's Catholic Primary School

About the Scientist	Knowledge	Skills
Living things and their habitats		
Year 6: A student ready for secondary Living things and their habitats *In this section talk about them as a learner in that subject. What are their qualities? What attitudes do you value in the student at this time? How are they developing as a whole child?*	*Ensure this is new knowledge and distinctly conceptually harder than what has been covered before.* It is expected students will know: • Know how to classify living organisms into groups. Students working at greater depth will also know: •	*Ensure this is a higher level of skill than has been covered previously, a higher level of mastery or a new skill altogether.* It is expected students will be able to: • Report and present on exploration of classification findings in oral and written form. • Deduce the different groups organisms belong to which classification. Students working at greater depth will also be able to: •
Year 5: A student ready for Living things and their habitats in year 6 …	It is expected students will know: • The life cycles of a mammal, amphibian, insect and bird. • The life process of reproduction in some plants and animals. • The impact of David Attenborough. Students working at greater depth will also know: •	It is expected students will be able to: • Explain the life cycles. • Compare/contrast life cycles. • Present information. • Explain reproduction plants and animals. Students working at greater depth will also be able to: •
Year 4: A student ready for Living things and their habitats in year 5 …	It is expected students will know: • Group living things in a variety of ways. • Explore and use classification keys to help group. • Identify and name a variety of living things in the local and wider area. Students working at greater depth will also know: •	It is expected students will be able to: • Categorizing and classifying Carroll diagrams • Use straightforward scientific evidence to answer questions to support findings. • Use secondary sources to answer questions. Students working at greater depth will also be able to: •
Year 3: A student ready for Living things and their habitats - plants in year 4 …	It is expected students will know: • Functions pf different parts of plants • Explore life and growth. • Investigate water transported implants	It is expected students will be able to: • Identify and categorize drawings and labels. • Observe, compare and record • Comparing and set up simple enquiries.

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	• Life cycle Students working at greater depth will also know: •	• Recognize when it's a fair test. Students working at greater depth will also be able to: •
Year 2: A student ready for Living things and their habitats in year 3 …	It is expected students will know: • Differences between living, dead and never alive • Certain habitats provide different needs • Know a variety of plants, animals including micro-habitats • Idea of food chains and sources of food Students working at greater depth will also know: •	It is expected students will be able to: • Compare differences – identify and classify (sorting circles) • Identify differences • Describe how animals/ plants obtain food. Students working at greater depth will also be able to: •
Year 2: A student ready for Living things and their habitats - plants in year 3 …	It is expected students will know: • Seeds and bulbs grow into plants • Know the different needs of plants Students working at greater depth will also know: •	It is expected students will be able to: • Observe changes of seeds and bulbs over time • Record observations • Perform tests, asking questions as to why seeds change • Investigate through fair testing Students working at greater depth will also be able to: •
Year 1: A student ready for Living things and their habitats - plants in year 2 …	It is expected students will know: • Name, common, wild and garden plants Inc. trees • Identify/ describe the basic structure of a variety of common flowing plants Inc. trees. Students working at greater depth will also know: •	It is expected students will be able to: • Explore and answer questions about plants growing in their habitat. • Observe the growth of flowers and veg that they have planted and the structure. • Recognize scientific and technical developments e.g. magnifying glass microscopes. Students working at greater depth will also be able to:

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Animals including humans		
Year 6: A student ready for secondary **Evolution and inheritance**	It is expected students will know: • Know that information about organisms that lived millions of years ago and can be obtained from fossils. • Characteristics are passed on from parents to children. • Know that there is variation between organisms and how this leads to the theory of evaluation.	It is expected students will be able to: • Identify scientific evidence to explain how living organisms may have changed over time. • Use scientific language to explain adaption of plants and animals. • Present findings about inherited characteristics on a suitable graph.
Year 6: A student ready for secondary **Animals including humans**	It is expected students will know: • Know how to name and describe the main parts of the human circulatory system. • Describe how the different blood vessels have different functions. • Explain how body function is affected by diet, exercise, drugs, lifestyle. • Know the ways nutrients are transported around the body.	It is expected students will be able to: • Recognizes which secondary sources will be most useful to research ideas about circulation. • Separate opinion from facts about circulation, the effect of lifestyle on the body and nutrient transport. • Record measurements of heart rare, blood pressure, body mass etc. • Identify relationships and patterns in data corralling lifestyle factors and body functions.
Year 5: A student ready for Animals including humans in year 6 …	It is expected students will know: • The changes as humans develop Students working at greater depth will also know: •	It is expected students will be able to: • Identify and explain changes • Recognize similarities and differences Students working at greater depth will also be able to: •
Year 4: A student ready for Animals including humans in year 5 …	It is expected students will know: • The function of teeth and name different types • The simple functions of the digestive system • How food chains work Students working at greater depth will also know:	It is expected students will be able to: • Recognized how secondary sources might help answer questions • Prepare format for recording data • Draw labelled diagrams Students working at greater depth will also be able to:

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Year 3: A student ready for Animals including humans in year 4 …	It is expected students will know: • That animals need the right nutrition and cannot make their own food. • That the functions of the skeleton/ muscles: support, protect, movement Students working at greater depth will also know: •	It is expected students will be able to: • Identify and categorise • Observe, compare, compare and record Students working at greater depth will also be able to: •
Year 2: A student ready for Animals including humans in year 3 …	It is expected students will know: • That offspring grow into adults • Basic needs of humans and animals • Importance of exercise, balanced diet and hygiene Students working at greater depth will also know: •	It is expected students will be able to: • Carry out simple tests • Observe • Identify and ask simple questions • Perform simple tests Students working at greater depth will also be able to: •
Year 1: A student ready for Animals including humans in year 2 …	It is expected students will know: • Identify a variety of common animals • Understand the structure of different animals Students working at greater depth will also know: •	It is expected students will be able to: • Comparing and describing • Observing animals first hand and noticing differences and similarities • Use simple secondary sources • Grouping to sort Students working at greater depth will also be able to: •

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Seasonal Changes – runs throughout the year as a project		
Year 1: A student ready for seasonal changes	It is expected students will know: • The four seasons and name them • Identify different weathers and links to seasons • Length of day varies each season	It is expected students will know: • Observing of changes in weather and time • Gather data accurately to measure rainfall • Use comparative language to describe change
Light		
Year 6: A student ready for light in secondary	It is expected students will know: • Know how light behaves including what reflections, shadows and light sources are. • Know how rear view mirrors on cars are useful and how periscopes work. • Know the path light takes to reach are eyes. • Know how a shadow is cast.	It is expected students will be able to: • Recognize how to reflect images using rear view mirrors and periscopes. • Explain how variables can influence the behaver of light.
Year 3: A student ready for light in year 6	It is expected students will know: • Need light to see • Reflection • Light from sun can be dangerous • Shadow formation and changes	It is expected students will be able to: • Recognise when to use fair testing • Observation over time • Identify light sources
Electricity		
Year 6: A student ready for electricity in secondary	It is expected students will know: • Know how to construct simple series circuits. • Know how to represent simple circuit diagrams using symbols. • Know how to change brightness/loudness of different components.	It is expected students will be able to: • Plan and investigation to find out how the number and voltage of cells affects a circuit. • Choose appropriate equipment to obtain accurate results. • Recognize the variables and what should be kept the same for a fair result. • Draw valid conclusions about results, and make practical suggestions on improving working method. • Present data on a suitable graph/diagram.
Year 4: A student ready for electricity in year 6	It is expected students will know: • Common appliance that use electricity	It is expected students will know: • Use straightforward evidence to support findings

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	• Construct simple circuits using wires, cells, switches and buzzers • Recognize common insulators and conductors • How to keep safe	• Use results to suggest improvements • Draw and label circuits • Set up practical investigations
Everyday Materials		
Year 5: student ready for everyday materials in secondary	It is expected students will know: • All materials have properties • What solubility is • What electrical and thermal conductivity is	It is expected students will know: • Classify materials and test them • Present findings
Year 2: student ready for everyday materials in year 5	It is expected students will know: • Materials can be changed by squashing, twisting, bending and stretching • What materials are best for which uses	It is expected students will know: • Observations of materials in changed forms • Record using charts
Year 1: student ready for everyday materials in year 2	It is expected students will know: • Difference between an object and the material it is made from • Name a variety of everyday materials: wood, plastic, metal • Simple physical properties	It is expected students will know: • Observations and testing of materials • Record using sorting hoops • Talk about findings using vocabulary
States of matter		
Year 4: A student ready for sates of matter in secondary	It is expected students will know: • Who Priestly was • Name some solids, liquids and gases • Water cycle, including evaporation and condensation	It is expected students will know: • Observe and record changes to materials when heated or cooled • Group and classify
Forces		
Year 5: A student ready for forces in secondary	It is expected students will know: • That gravity is a force • Air resistance, water and friction are forces and their effects • Who Sir Isaac Newton was	It is expected students will know: • Use equipment: stop watch, newton meter • Record findings and link to knowledge • Explore pulleys and their uses
Year 3: A student ready for forces in year 5	It is expected students will know: • How things move on different surfaces • Some forces need contact	It is expected students will know: • Compare and record

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	• Magnets repel, attract	
Sound		
Year 4: A student ready for sound in secondary	It is expected students will know: • How sounds make vibrations • Sound travels through medium to ear • Patterns between pitch, volume and strength of vibrations • Sound gets fainter as distance increases	It is expected students will know: • Use sound units • Recognise sound
Rocks and Soils		
Year 3: A student ready for rocks and soils in secondary	It is expected students will know: • Different types of rocks and the names of them • How to describe how fossils are formed • Soils made from rocks and organic matter	It is expected students will know: • Compare and recognize and test rock types • Use Venn and Carroll diagrams to record and classify
Earth and Space		
Year 5: A student ready for Earth and space in secondary	It is expected students will know: • Movement of Earth and other planets relative to the Sun • Movements of the moon • Why there is night and day • Work of Neil Armstrong and Tim Peakes	It is expected students will know: • How to use a compass correctly • Use equipment to measure shadows • Use scientific language: rotation, orbit, axis, spherical for explanations