Science Learning Objectives and Enquiries, Year 5, 2024-25

Year 5 South America

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Anglo-Saxons	Vikings	Climate Zones	Natural Resources	The Ancient Mayans	Earth and Space
Properties and changes of materials		Living things and their habitats	Animals including humans	Forces	Earth and Space
Lesson 1 **LO:** Compare and group everyday materials based on their properties **WS: Answering questions** With support, ask pertinent questions. Begin to, explore ideas and raise different kinds of questions about scientific phenomena. **Enquiry:** How can different materials be classified?	**Lesson 1** **LO:** Explain how to recover a substance from a solution **WS: Observations** With support, make decisions about what observations to make, what measurements to use and for how long to make them, and whether to repeat them. **Enquiry:** How can we use evaporation to separate salt from water?	**Lesson 1 DE** **LO:** Understand the life cycle of mammals **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations**	**Lesson 1 DE** **LO:** Identify developments during each stage of a human life cycle **WS: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs**	**Lesson 1** **LO:** Identify forces acting on objects **WS: Record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing.** **Enquiry:** Can you label and name all the forces acting on the objects in each situation?	**Lesson 1 DE** **LO:** Explain what is a Solar System **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations** **Enquiry:** What is a Solar System and how is it formed?
Lesson 2 **LO:** Carry out a fair and comparative test to test the thermal conductive properties of materials **WS: Taking measurements, using a range of scientific equipment Recording data and results of increasing complexity using bar graphs** **Enquiry:** Which material should your teacher use to keep their tea warm?	**Lesson 1** **LO:** Decide how mixtures might be separated – report findings from enquiries **WS: Pattern seeking:** Look for different causal relationships in their data and identify evidence that refutes or supports their ideas **Enquiry:** How can mixtures be separated?	**Lesson 2 DE** **LO:** Compare the life cycles in insects and amphibians **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations** **Enquiry:** What is the difference between the life cycle of an insect and amphibian?	**Lesson 2 DE** **LO:** Use data and identify evidence that refutes or supports ideas **WS: Pattern seeking:** **Look for different causal relationships in their data and identify evidence that refutes or supports their ideas** **Enquiry:** Do bigger animals have a longer gestation period than smaller animals?	**Lesson 2 DE** **LO:** Understand the influence gravity has on the universe **WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry:** Explore the life and work of Isaac Newton	**Lesson 2** LO: Understand the differences between a heliocentric and geocentric model of the solar system **WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry:** Why are the planets different to each other?
Lesson 3 **LO:** Know and understand a range of ways in which properties of materials can be tested **WS: With support, make decisions about what observations to make, what measurements to use and for how long to make them, and whether to repeat them.**	**Lesson 3** **LO:** Know that dissolving, mixing and changes of state are reversible changes **WS: Answering questions** **Begin to, explore ideas and raise different kinds of questions about scientific phenomena.** **Enquiry:** Which materials dissolve and which do not?	**Lesson 3/4 DE** **LO:** Understand the difference between the life cycle of birds, mammals and reptiles **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations** **Enquiry:** What is the difference in the three life cycles?	**Lesson 3 DE** **LO:** Identify the changes experienced in puberty **WS: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs** **Enquiry:** What changes are experienced during puberty?	**Lesson 3 DE** **LO:** Understand how air resistance acts on objects **WS: Taking measurements and using a range of scientific equipment with increasing accuracy and precision; taking repeat readings when appropriate** **Enquiry** How does the size of a parachute affect the time it takes to fall? **Outdoor Lesson**	**Lesson 3 DE** **LO:** Name key characteristics of a planet and understand the order of the planets from the Sun **WS: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision and taking repeat readings when appropriate** **Enquiry:** Are all the planets the same distance from each other? **Outdoor Lesson**

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Lesson 5 **LO:** Research information about Spencer Silver **WS: Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.** **Enquiry**: Who is Spencer Silver and what did he developed?	**Lesson 4 DE** **LO**: Investigate burning – combustion **WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry:** Does burning create new materials?	**Lesson 5** **LO:** Understand the importance of documenting living things and highlighting their decline in the world **WS: Reporting and presenting findings from enquiries -presentation** **Enquiry:** Why David Attenborough`s work is so important?	**Lesson 4** **LO:** Learn some ways that the growth of children is measured **WS: In conclusions, identify causal relationships and patterns in the natural world from evidence** **Enquiry:** Are the oldest children in school the tallest?	**Lesson 4** **LO:** Understand how water resistance acts on objects **WS: WS: Reporting and presenting findings from enquiries -** **Enquiry:** Compare water resistance e.g. boats in a gutter of water, plasticine in a cylinder of liquid	**Lesson 4** **LO:** Describe the movement of the Earth and other planets relative to the sun in the solar system **WS: Find out about how scientific ideas have changed and developed over time** **Enquiry:** Is there a pattern between the size of a planet and the time it takes to travel around the Sun?
Lesson 5 DE **LO:** Carry out a fair and comparative test to test the hardness of materials **WS: Reporting and presenting findings from enquiries -** **Enquiry:** Are all materials the same hardness? Investigate 5 different materials which can be scratched by 4 different objects of increasing hardness.	**Lesson 5** **LO:** Explain that some changes result in the formation of new materials **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations** **Enquiry:** What liquids make a nail rust? **Observe rusting with uncoated nails in different liquids.**	**Lesson 6** **LO:** Describe life processes of a plant **WS: Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations**	**Lesson 5 DE** **LO:** Describe the changes as humans develop to old age **WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry**: Do humans age differently depending on their lifestyle?	**Lesson 5 DE** **LO:** Understand how friction acts on objects **WS: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary** **Enquiry:** What is the best surface to place on a floor to prevent people from slipping?	**Lesson 5** LO: Explore how Aristotle concluded the Earth was spherical **WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry:** Is the Earth spherical?
Lesson 6 **LO:** Plan an enquiry to answer a question **WS: Select and plan a type of scientific enquiry to use to answer scientific questions** **Enquiry:** Which materials are soluble and insoluble?	**Lesson 6** **LO:** Use secondary sources to research events - microplastic **WS: Gather and record data to help in answering questions** **Enquiry:** What are micro plastics and how are they impacting our world?	**Lesson 7** **LO:** Describe life processes of reproduction in some plants **WS: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary** **Enquiry:** Which plant can we grow from cuttings and observe whether they grow roots/stem/ leaf/flower?		**Lesson 6 DE** **LO:** Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect **WS: Reporting and presenting findings from enquiries -**	**Lesson 6 DE** **LO**: Understand how Earth moves in space and how night and day happen **WS: Reporting and presenting findings from enquiries • Use a model to answer questions** **Enquiry: How do we get day and night on Earth?**
	Lesson 7 **LO:** Use secondary sources to research events - microplastic **WS: Gather and record data to help in answering questions** **Enquiry:** What are micro plastics and how are they impacting our world?	**Lesson (Additional)** **LO:** Describe life processes of reproduction in some plants **WS: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary** **Enquiry:** Observe strawberry/spider plants through the year.		**Lesson 7 DE** **LO:** Explain how gears work and their purpose; notice patterns **WS: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary**	**Lesson 7** **LO:** Describe the movement of the moon relative to the Earth **WS: WS: Identifying scientific evidence that has been used to support or refute ideas or arguments** **Enquiry:** What are the moon phases?
Assessment Test from Developing Experts Skills assessed during enquiries	**Assessment** Test from Developing Experts Skills assessed during enquiries	**Assessment** Test from Developing Experts Skills assessed during enquiries	**Assessment** Test from Developing Experts Skills assessed during enquiries	**Assessment** Test from Developing Experts Skills assessed during enquiries	**Assessment** Test from Developing Experts Skills assessed during enquiries