Year 3 science long term plan

Year 3 Term 1	Year 3 Term 2	Year 3 Term 3	Year 3 Term 4	Year 3 Term 5	Year 3 Term 6
Plants **Preteach – What do I already know about plants?** **Lesson 1 – Can I explain how I know a plant is a living thing?** Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Classify a range of common plants according to many criteria (environment found, size, climate required, etc.). **Lesson 2 – What is the function of the roots in a flowering plant?** Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Investigate the way in which water is transported within plants. **Lesson 3 – 4 – What do plants need to be healthy?** **(Formal investigation write up)** Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings. **Lesson 5 – How is water transported (moved) in plants?** **MOVED TO TERM 6** Investigate the way in which water is transported within plants. Setting up simple practical enquiries, comparative and fair tests.	**Rocks** **Preteach – What do I already know about rocks and soil?** **Lesson 1 – How could I group together different types of rock?** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Begin to relate the properties of rocks with their uses. **Lesson 2 – What are the different types of rock?** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Classify igneous and sedimentary rocks. **Lesson 3 – 4 – Which rocks are the hardest?** **(Formal investigation write up)** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Explain their findings in different ways (display, presentation, writing). Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings. **Lesson 5 – How are fossils made?** Describe in simple terms how fossils are formed when things that have lived are trapped within rock. **Lesson 6 – What is soil made from?**	**Light** **Preteach – What do I already know about light?** **Lesson 1 – How are shadows made?** Recognise that they need light in order to see things and that dark is the absence of light. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Explain why lights need to be bright or dimmer according to need. **Lesson 2 – 3 – How can we change the size of a shadow?** **(Formal investigation write up)** Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change. Explain why their shadow changes when the light source is moved closer or further from the object. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 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Using straightforward scientific evidence to answer questions or to support their findings. **Lesson 4 – How do mirrors work?** Notice that light is reflected from surfaces. **Lesson 5 – How do different amounts of light travel through different materials?** Explain the difference between transparent, translucent and opaque.	**Forces and magnets** **Preteach – What do I already know about forces and magnets?** **Lesson 1 – Do different objects move the same or differently on different surfaces?** Compare how things move on different surfaces. Setting up simple practical enquiries, comparative and fair tests. **Lesson 2 – Do all forces need contact between two objects?** Notice that some forces need contact between two objects, but magnetic forces can act at a distance. **Lesson 3 – 4 - How does a magnet attract and repel?** **(Formal investigation write up)** Observe how magnets attract or repel each other and attract some materials and not others. Investigate the strengths of different magnets and find fair ways to compare them. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Use their findings to draw a simple conclusion. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings. Suggest improvements and predictions for further tests. **Lesson 5 – Which materials do magnets attract?** 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.	**Animals including humans** **Preteach – What do I already know about nutrition and the human skeleton?** **Lesson 1 – What do living things need to be healthy?** 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. **Lesson 2 – Why do different animals have different diets?** 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. **Lesson 3 – What nutrition do humans need and why?** 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. **Lesson 4 – What is the function of the skeleton?** Identify that humans and some other animals have skeletons and muscles for support. Explain how the muscular and skeletal systems work together to create movement. **Lesson 5 – How do muscles work?** Identify that humans and some other animals have skeletons and muscles for support. Explain how the muscular and skeletal systems work together to create movement. **Lesson 6 – Do people with the longest leg length jump the furthest?** **(Formal investigation write up)** Identify that humans and some other animals have skeletons and muscles for support. Explain how the muscular and skeletal systems work together to create movement. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	**Investigations** **Learning Objectives for the term.** Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings. Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. Explain their findings in different ways (display, presentation, writing).

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RESOURCES	**RESOURCES**				
Focus scientist for display: Wu Zhengyi – top botanist in China who published research on 1,766 new plant populations	**Lesson 6 plan –** schoolgardening.rhs.org.uk/Resources/Lesson-Plan/Soils-lesson-plan **Focus scientist for display: Marguerite Thomas Williams – first African American woman to earn a doctorate in geology in the US.**	**Focus scientist for display: Ibn al-Haytham - pioneering scientific thinker who made important contributions to the understanding of vision, optics and light.**	**Focus scientist for display: Christine Darden – aeronautical engineer and expert on sonic booms**	**Focus scientist for display: Rujuta Diwekar - India's leading nutrition and exercise science expert, Rujuta Diwekar is a vocal champion of using our common sense and un - complicating the act of eating.**	**Focus scientist for display: George Washington Carver - an American agricultural scientist and inventor who promoted alternative crops to cotton and methods to prevent soil depletion. He was the most prominent black scientist of the early 20th century.**