Leavening Community Primary School Medium Term Plan

Subject: Science	**Number of Sessions: 7**	**Class:** Oak Trees
Y3/4 **Most children will be able:** notice that light is reflected from surfaces and can construct a simple circuit. **Some children who have not made much progress will be able:** recognise that dark is the absence of light and identify some common appliance that need electricity to work. **Some children will have developed further and will be able:** explain how light travels and how different factors can affect the brightness of a bulb.	**Y5/6** **Most children will be able:** to explain how we see things and associate the brightness of a lamp and the volume of a buzzer with the number and voltage of cells used in a circuit. **Some children who have not made much progress will be able:** to recognise that light travels in straight lines and use some of the recognised symbols when drawing a diagram of a simple circuit. **Some children will have developed further and will be able:** explain how light travels to the human eye and how that helps us to see things. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches	**Curriculum References:** **Y3/Y4 Light** Pupils should be taught to: •Recognise that they need light in order to see things and that dark is the absence of light •Notice that light is reflected from surfaces •Recognise that light from the sun can be dangerous and that there are ways to protect their eyes •Recognise that shadows are formed when the light from a light source is blocked by a solid object •Find patterns in the way that the size of shadows change. **Y5/6 Light** Pupils should be taught to: •Recognise that light appears to travel in straight lines •Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye •Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes •Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Y3/4 Electricity** Pupils should be taught to: •Identify common appliances that run on electricity •Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers •Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery

		•Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit •Recognise some common conductors and insulators, and associate metals with being good conductors. **Y5/6 Electricity** Pupils should be taught to: •Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit •Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches •Use recognised symbols when representing a simple circuit in a diagram.

Progression of skills:	**Planned Learning Experiences:**	**Assessment Opportunities and Learning Outcomes:**	**Resources:**	**Cross-Curricular Links:**
Y3/Y4 I identify and name appliances that require electricity to function. I know that light is reflected from a surface. I know and demonstrate how a shadow is formed. •I explore shadow size and explain the changes.	Session 1. https://www.topmarks.co.uk/Search.aspx?q=electricity Sort appliances into battery operated and mains electricity. Exploration to lead onto torches so that activities can focus on light AND electricity. Session 2. Reflections –how we see things exploration.	Quiz Diagrams	Torches Different types of batteries Video clips Food for taste test Blindfold	Writing History

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I construct a series circuit. •I identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). •I know how to draw a circuit diagram. •I predict and test whether a lamp will light within a circuit. •I know the function of a switch in a circuit. I know the difference between a conductor and an insulator; giving examples of each.	Session 3. Shadows Shadow investigation – how do shadows change when the distance of light sources are varied? Session 4. Naturally occurring electricity https://www.ducksters.com/science/physics/electricity_in_nature.php Session 5. Circuits and components Make the circuit work. https://www.bbc.co.uk/bitesize/clips/z28b4wx Session 6. Conductors and insulators Investigation		Investigation sheet Ipads Components Materials	
Y5/6 Light I know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.	Session 1. Exploring optical instruments		Optical instruments	

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•I know how light travels. •I know and demonstrate how we see objects. I know why shadows have the same shape as the object that casts them. Electricity •I know how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. •I compare and give reasons for why components work and do not work in a circuit. •I draw circuit diagrams using correct symbols.	Session 2. How light travels and how we see objects. The journey of light. https://www.bbc.co.uk/programmes/p0119rsp watch video clip and take notes. https://www.stem.org.uk/resources/elibrary/resource/30652/light-how-we-see-things Explore different scenarios in groups. Instead of watching the 5th scenario, let the children do the activity for real. Session 3. Shadows Shadow investigation – how do shadows change when the distance of light sources are varied? Session 4. Natural occurring electricity https://www.ducksters.com/science/physics/electricity_in_nature.php Session 5. Circuits and components Make the circuit work https://www.bbc.co.uk/bitesize/clips/z28b4wx Session 6. Conductors and insulators Investigation		Video clips Foods Blindfold Investigation sheets Ipads Components Materials	

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