



St Andrew's Church of England Junior School – Scheme of Work: [Science](#)



At St Andrew's our vision statement is 'Shining Light on a World of Possibilities' and we have designed our curriculum to be relevant, exciting and creative, underpinned by our school values and based around our 'curriculum drivers':

- Curiosity, enquiry and creativity
- Community
- Possibilities

WS-Working Scientifically

Autumn Term 1 – Electricity

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1	Can I use simple circuit symbols and diagrams? WS- recording & reporting. Preassessment	Series circuit Bulb Wire Buzzer Switch Conductor Insulator Cell Voltage current	Children to begin with a preassessment to gauge their previous knowledge. Children to investigate circuit building using instructions and circuit symbols.	• Preassessment- Can I share my knowledge of electricity? • Can they follow it clearly? • Is it easy to work out the different components?
Session 2	Can I recognise and explain what is needed for a circuit to work? WS- Plan using scientific equipment and record	Series circuit Bulb Wire Buzzer Switch Conductor Insulator Cell Voltage current	Children to investigate the requirements for a circuit to work.	• What does a circuit need? • What does a circuit not need? • Why is not working? • How will you fix it?

Session 3 <u>TAPS</u>	Can I plan how to investigate an idea by managing variables? WS - Plan	Series circuit Bulb Wire Buzzer Switch Conductor Insulator Cell Voltage current	Children to investigate variations in bulb brightness and plan a scientific investigation.	• What evidence do you need? • How will you investigate the brightness of the bulb? • How will you ensure your investigation is reliable? • What will be the dependent and independent variables?
Session 4	Can I share my understanding of keeping safe around electricity? WS – Questioning	Series circuit Bulb Wire Buzzer Switch Conductor Insulator Cell Voltage current	Show a video of making a piece of fuse wire blow. Discuss what is happening to make it melt. Demonstrate what is inside a plug – go through safety that children should not do this at home. Show them where the fuse is.	• Why is electricity dangerous? • How do you stay safe around electricity? • What makes electrical components safe? • How can we tell something is dangerous? • How should we deal with an electrical fire?
Session 5	Can I investigate what happens to a bulb, a motor and a buzzer if the voltage is increased? WS – Interpret & report	Series circuit Bulb Wire Buzzer Switch Conductor Insulator Cell Voltage current	Children to investigate the impact of voltage on a circuit, using a number of components.	• What is voltage? • What is current? • What can have an impact on a circuit? • What happens if more components are added? • How will you ensure your investigation is reliable?
Session 6	Postassessment- Can I share my knowledge of electricity?			• Postassessment- Can I share my knowledge of electricity?

Autumn Term 2 – Light

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1	Can I recognise that light appears to travel in straight lines and how shadows are formed? WS – Interpret & report Preassessment- Can I share my ideas about light and shadow?	Reflect Dark Light Shadow Transparent Translucent Opaque Spectrum Ultraviolet light Light ray Cornea Iris Pupil lens	Children to begin with a preassessment to gauge their previous knowledge. Children to investigate light travelling in straight lines and the formation of shadows.	Preassessment- Can I share my ideas about light and shadow? • Can you draw a diagram showing how light travels? • What is a shadow? • How do we know how light travels?
Session 2	Can I explore how to change the size of a shadow? WS- Plan enquiry & record	Reflect Dark Light Shadow Transparent Translucent Opaque Spectrum Ultraviolet light Light ray Cornea Iris Pupil	Children to investigate shadows. Children to think about are how they form and what determines the shape and size of a shadow.	• The children use their hands to make shadow pictures. Can they make the shadows bigger or smaller? How? • Draw a diagram to show how the shadow is formed and how they changed it – can they explain the relationship?

		lens		
Session 3	Can I use how light travels to explain how we see things? WS – Observe & report	Reflect Dark Light Shadow Transparent Translucent Opaque Spectrum Ultraviolet light Light ray Cornea Iris Pupil lens	Children to apply the idea of how light travels to explain how we see things. Children will need to investigate how light behaves at reflective surfaces.	• How does light travel? • What does reflective mean? • How are we able to see ourselves in a reflective surface? • What is the relationship between how light travels and our sight?
Session 4	Can I explore how light can be reflected and bent in various ways? WS – plan enquiry & observe	Reflect Dark Light Shadow Transparent Translucent Opaque Spectrum Ultraviolet light Light ray Cornea Iris Pupil lens	Children to observe what is happening during an investigation that involves the bending of light.	• Make observations of what happens and try to explain it. Can you draw how you saw it? • Where could this be useful in everyday life?
Session 5 TAPS	Can I use the idea that light appears to travel in straight lines to explain why shadows have the same shape as their objects?	Reflect Dark Light Shadow	Introduce the investigation by shining a light on an object and asking how the shadow of the object could be changed (e.g. size of	• Can children make accurate measurements? • Can children plot their results accurately on a line graph?

	WS – Enquiry, observe & record	Transparent Translucent Opaque Spectrum Ultraviolet light Light ray Cornea Iris Pupil lens	object/number of blocks, distance/angle of torch). List potential investigation questions. Ask children to select a question which will result in numerical data and carry out the investigation. As a class, generate clear success criteria for taking precise measurements and drawing accurate line graphs to display results. Focus on recording of results. Children could peer assess graphs against the success criteria, giving each other feedback for improvement.	• What units of measurement will we use? • How are you making sure that it is a fair test? • What kind of a graph can you draw with that data? • What scale would be the most appropriate to use for each axis? • How will you label each axis?
Session 5.5	Postassessment- Can I share my ideas about light and shadow?			Postassessment- Can I share my ideas about light and shadow?

Spring Term 1

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1				•
Session 2				•
Session 3				•
Session 4				•
Session 5				•
Session 6				•