

# Year 2 Science – Light and Dark, Electricity

## Knowledge and skills

To identify different light sources including the sun.  
To know that light travels from a source.  
To know that light travels through some material better than others.  
To know that light is reflected from surfaces.

To know how to make a simple circuit.  
To know that simple circuits involve batteries, wires, bulbs and other component.  
To be able to represent a circuit.  
To know that a switch can be used to break a circuit.  
To construct a circuit from a given diagram.

## Vocabulary

Shadow  
Source  
Opaque  
Translucent  
Transparent  
Reflect  
Material  
Construct  
Travel  
Circuit  
Electricity  
Battery  
Bulb  
Wire  
Switch  
Attached  
Combined  
Lightbulb

## Snapshot overview

Exploratory lesson – explore variety of light sources and materials.

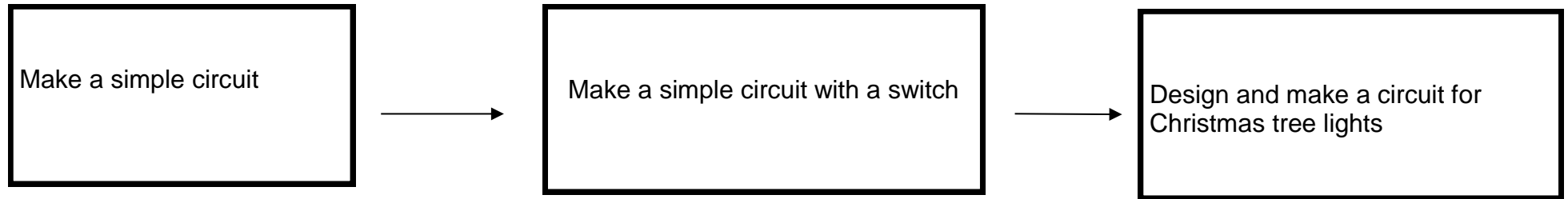
## Design/ plan lesson:

You need to make a shadow puppet show (Christmas themed) Design 3 aspects:

- 1) What is the best material to make the puppet from – why?
- 2) What is the best colour to show your puppet show on? Why?
- 3) What is the best light source to use – why?

Make and test

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## Medium Term Planning

Year Group: 2

Term:

Topic: Light and Dark, Electricity

	Learning Objective	Input (including key questions and vocabulary)
Session 1	<p>I can:</p> <ul style="list-style-type: none"><li>• identify different light sources including the sun.</li><li>• understand that light travels from a source.</li><li>• understand that light travels through some material better than others.</li><li>• understand that light is reflected from surfaces.</li></ul>	<p>Children will explore the different properties of materials in relation to light source (torch/light from window/whiteboard). Children are given a variety of materials to explore e.g. paper, card, foil, felt, plastic.</p> <p>Discuss different sources of light and different strengths.</p> <p>Children to explore, discuss and evaluate effectiveness of different materials in letting light through/blocking light.</p> <p>Introduce opaque/transparent/translucent. Take photos.</p>

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Session 2	<p>I can:</p> <ul style="list-style-type: none"> <li>• identify different light sources including the sun.</li> <li>• understand that light travels from a source.</li> <li>• understand that light travels through some material better than others.</li> </ul> <p>understand that light is reflected from surfaces.</p>	<p>Task: next lesson we will need to put on a puppet shadow puppet show (Christmas themed). This lesson we will design and plan it. Think about the following 3 aspects:</p> <ol style="list-style-type: none"> <li>1) What is the best material to make the puppet from – why?</li> <li>2) What is the best colour to show your puppet show on? Why?</li> <li>3) What is the best light source to use – why?</li> </ol> <p>To be done in small groups of 3 or pairs. Design in books in chosen format.</p>
Session 3	<p>To identify different light sources including the sun. To know that light travels from a source. To know that light travels through some material better than others. To know that light is reflected from surfaces.</p>	<p>To make their puppets based last lessons plan. Test and and evaluate in books whether their plan worked.</p> <p>In books (include photograph).</p>

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Session 4	I can construct a simple circuit.	<p>Explain we are going to make a circuit to light a bulb.</p> <p>Watch Espresso Science 1 – Electricity- Circuits- Parts of a circuit. Look at the components we have. Put children in pairs and take it in turns to explain what each component does.</p> <p>In pairs try to make a circuit which will light the bulb. Explain what happens when you break the circuit. What does this tell you about how electricity works? Explain cause and effect of changing components within the circuit.</p> <p>Take photos for books</p>
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Session 5	<p>I can construct a simple circuit with a switch.</p>	<p>Explain we are going to make a circuit to light a bulb.</p> <p>Watch Espresso Science 1 – Electricity- Circuits- Parts of a circuit. Look at the components we have. Put children in pairs and take it in turns to explain what each component does.</p> <p>In pairs try to make a circuit which will light the bulb. Explain what happens when you break the circuit. What does this tell you about how electricity works? Explain cause and effect of changing components within the circuit.</p> <p>Take photos for books</p>
Session 6	<p>I can design a circuit of my own.</p>	<p>Mrs Corbin wants you to design some fairy lights for a Christmas tree. What will you need? What materials could you use to cover/surround your circuit? Which materials are opaque and which which will not let light through?</p> <p>Design on sugar paper, make and test (in groups).</p> <p>Take photos for books.</p>

To identify 3 different light sources

To discuss which materials let light through and which don't and can name 3 examples

To understand how a circuit is made

To make a circuit that lights a light bulb.