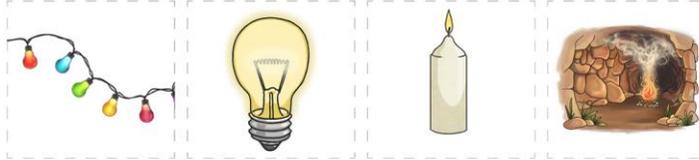


River Bank Primary Knowledge Organiser	Year 4	Spring 1	Design technology Circuit
----------------------------------------	--------	----------	------------------------------

Planning process	Designing	Making
------------------	-----------	--------

Children will investigate the different types of energy including water, air and electricity. They will be able to explain how key events and individuals in design and technology have helped shape the world.



The Anglepoise lamp is a balanced-arm lamp designed in 1932 by British designer George Carwardine. © During the Palaeolithic

Design brief: To design and construct a battery operated light. Children need to consider the different people who may use it, where it will be used and what for.

Functional considerations: The circuit needs to be complete in order for the product to give of light.

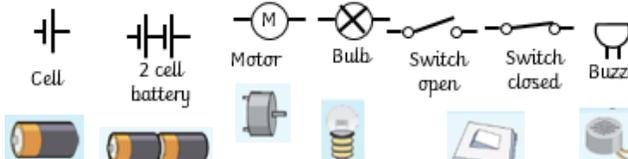
I can select materials and components to make my light.
I can select suitable materials to make my light out of which are similar to the effect I want to achieve.
I can select appropriate sized batteries and components to hold the battery.
I can select the switch.

Evaluate	Key Vocabulary and Important Facts	Knowledge and understanding
----------	------------------------------------	-----------------------------

Children need to evaluate their torch against the design brief. Does their torch meet the criteria? If not, what would they do next time?

- Function - What does it do and how does it work?
- Aesthetics - Is it attractive, why and what makes it so?
- Construction - What is it made from, how and why?

I can create a well-finished product.
I can wire up a circuit to the battery and the switch to make the bulb work effectively.
I can add in materials to make the light reflect efficiently so that it works well and look nice.
I can make the lamp look well finished by adding functional and aesthetic decoration.
I can complete a detailed evaluation of my finished product.
I can answer questions aimed at evaluating my light.
I can use the design criteria to inform my evaluation.



Insulator - a material or an object that does not easily allow heat, electricity, light, or sound to pass through it.

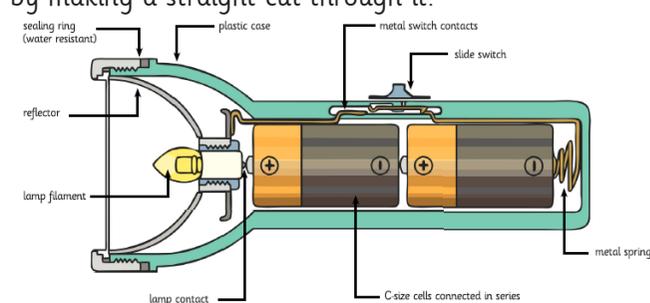
Conductor - is an object or type of material that allows the flow of an electrical current.

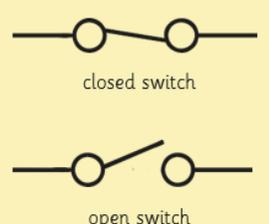
Electrical currents need a path on which to travel – a circuit.

AD 2015: LED lights are the biggest thing to hit lighting since electric light was invented! LED lights use up to 85% less energy than conventional bulbs. LED lighting is available in a huge range of unique designs.

Exploded diagram – a diagram of an object, that shows the relationship or order of assembly of various parts.

Cross section diagram – when a product is exposed by making a straight cut through it.





closed switch

open switch

<p>1. Which one is an example of an Anglepoise lamp?</p>	<p>a.</p> 	<p>b.</p> 	<p>c.</p> 	<p>d.</p> 
<p>2. What year was an Anglepoise lamp designed in?</p>	<p>a. 1918</p>	<p>b. 1932</p>	<p>c. 2015</p>	<p>d. 1968</p>
<p>3. Which one is an example of renewable energy?</p>	<p>a. Natural gas</p>	<p>b. Coal</p>	<p>c. Petroleum</p>	<p>d. Wind</p>
<p>4. Which of these materials is a conductor?</p>	<p>a. Rubber</p>	<p>b. Wood</p>	<p>c. Copper</p>	<p>d. Glass</p>
<p>5. What does the S stand for in STEM?</p>	<p>a. Science</p>	<p>b. Smart</p>	<p>c. Sustainable</p>	<p>d. Suitable</p>
<p>6. Who invented the 'modern light bulb' in 1879?</p>	<p>a. Leonardo da Vinci</p>	<p>b. Thomas Edison</p>	<p>c. Benjamin Franklin</p>	<p>d. George Carwardine</p>