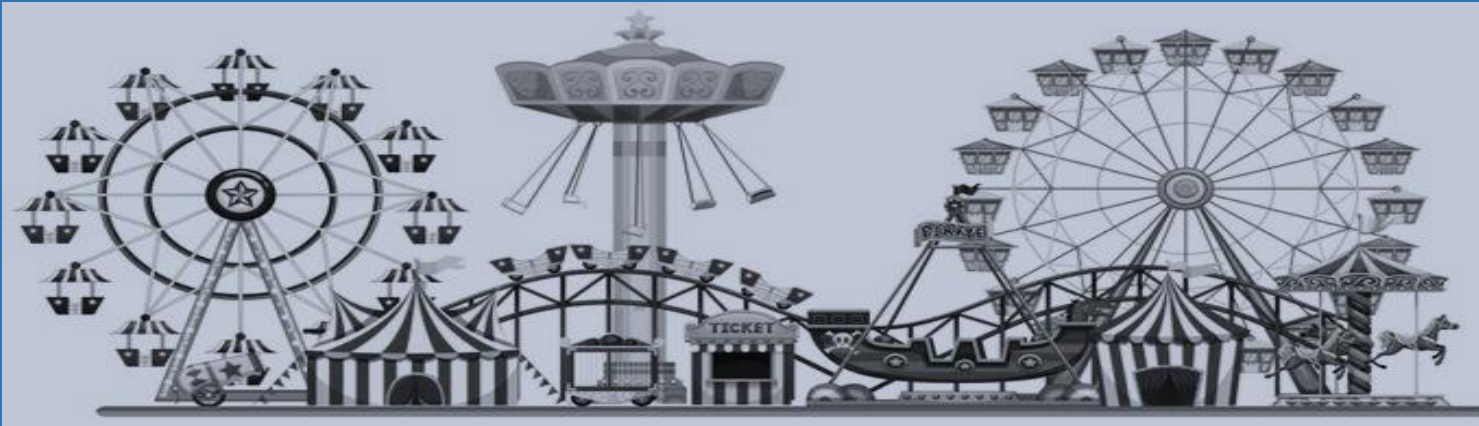




Topic Title: All the Fun of the Fair

Year 4

Autumn 2



Key Question

What component parts will your circuit need to light a bulb, sound a buzzer or turn a motor?

Big Questions:

Why do we need electricity?

How could we change the brightness of a bulb?

How does using two cells impact on the brightness of your bulb?

What is the difference between a conductor and an insulator?

Which would complete a circuit most effectively – a metal or a wooden spoon?

What is the purpose of a switch within a circuit?

Skills Taught:

- 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.

Immersion Activity/Provocation:

Linked to a D&T Christmas project – design (pictorial representation rather than circuit symbols) and make a circuit to light your revolving Christmas carousel or Ferris wheel.

Topic Title: All the Fun of the Fair

Enquiry Question: What component parts will your circuit need to light a bulb, sound a buzzer or turn a motor?

Focus Texts: *Jinks & O'Hare Funfair Repair*



	<u>Skills and Knowledge</u>
Some children will:	• Identify how sounds are made, associating some of them with something vibrating. • Observe and name a variety of sounds, nothing that we hear with our ears. • Identify common appliances that run on electricity. • Construct a simple series electrical circuit.
Most children will:	• Identify and name the basic parts of a simple series electrical circuit, including cells, wires, bulbs, switches and buzzers, and use recognised symbols when representing a simple circuit in a diagram. • 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.
Some children will progress further and will:	• 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.

Enrichment/Outdoor Learning:

Simple circuit 'Concept Cartoon'

'Circuit Repairers' challenge:

<https://www.stem.org.uk/resources/elibrary/resource/26916/electricity>

'Power Up' Circuit Builder:

<http://powerup.ukpowernetworks.co.uk/powerup/en/under-11/circuits/circuit-builder/>

Animations and videos:

<https://www.bbc.co.uk/bitesize/topics/zj44jxs>

<https://www.schoolscience.co.uk/exploringthefirstelectricalhouses>

Carousel Craft Activity

<https://www.youtube.com/watch?v=rtjCHQgxJJU>

Previously On ... (links to prior learning):

Links to prior learning during *Lights, Camera, Action* topic in Year 3:

- 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.
- Find patterns in the way that the size of shadows changes.
- Identify how sounds are made, associating some of them with something vibrating.
- Recognise that vibration from sounds travel through a medium to the ear.

Key Vocabulary:

appliances, electricity, wire, battery, cell, switch, bulb, lamp, buzzer, motor, brightness, loudness, revolve, rotation, turn, component, symbol, conductor, insulator, current, metal, circuit, series

Cross-curricular links:

English – reading and writing linked to whole-class text, *Jinks & O'Hare Funfair Repair*

Maths – measurement involved in designing and constructing Christmas carousels or Ferris wheels

D&T – revolving Christmas carousels or Ferris wheel for whole-school D&T project to be sold at Christmas Fayre

Celebration of knowledge and skills gained (opportunities for assessment):

Demonstration and evaluation of Christmas fairground rides.

Selling of Christmas fairground rides at whole-school Christmas fayre.