

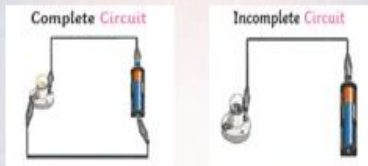
# Class Tamar

## DT

Battery operated lights

Summer 2 2022

*Before we started making our lamps we learnt all about electricity and how to make a bulb light up using a full battery-operated circuit. We also made our own switches for our lamps (please see our science photo book)*



## Class Tamar Science Electricity Summer 2 2022

1

We were introduced to the unit and learnt the difference between battery operated appliances and appliances that run on mains electricity. We classified and presented data, identifying common appliances that run on electricity using a Venn diagram.

Some battery powered appliances need mains to charge it!



2

We had a go at constructing a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. We then drew and labelled diagrams of our circuits.



We helped each other to problem solve and check which components worked and didn't work.

3

We had a go at using an energy stick! As a class we made a circuit. We learnt that in order for the light and buzzer to work, we had to make a full circuit with no breaks. We then had a go at identifying complete and incomplete circuits, giving reasons for our thinking.

If someone lets go of someone's hand then the electricity can't get to the energy stick...



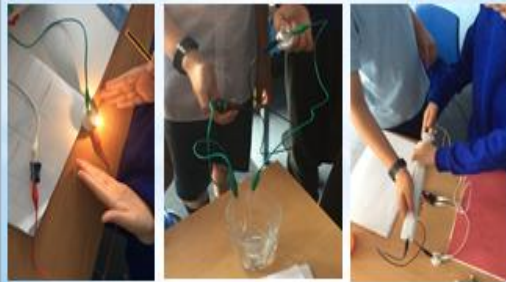
It was hard to pass the stick on without breaking the circuit!

4

We learnt about the difference between 'conductors' and 'insulators' and gave reasons why it's important that we are aware of which materials allow electricity to travel through it and which do not. We then investigated which materials were conductors and insulators.

Metal is a conductor as the bulb lit up!

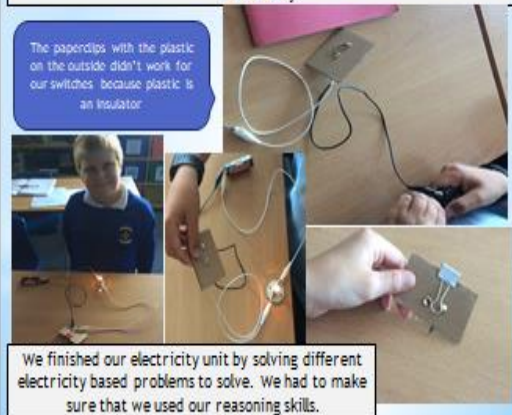
Glass and plastic are insulators - the bulb didn't light up!



5

We learnt how switches work and made our own switches. When using our switches we were able to explain how our switches worked using scientific vocabulary.

The paperclips with the plastic on the outside didn't work for our switches because plastic is an insulator.

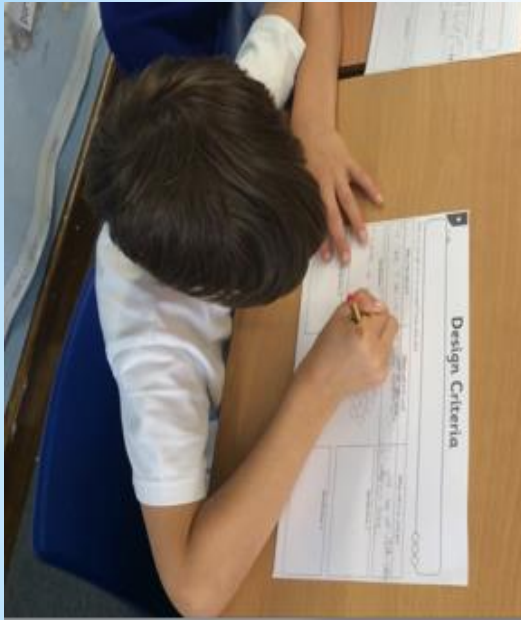


We finished our electricity unit by solving different electricity based problems to solve. We had to make sure that we used our reasoning skills.

6



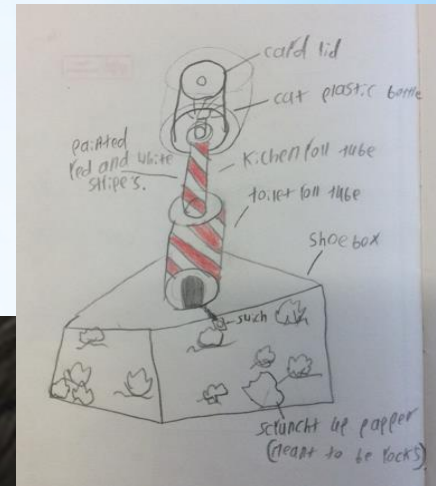
We carefully considered the design criteria.



My lamp is going to be for my bedroom when I read my books at night.

After we completed our first design we received peer feedback, this then helped us make our final lamp design.

It needs to have somewhere where the light can shine through!



I think the lighthouse needs to have a door and some rocks at the bottom to make it look more real.





At home, we collected all of the recycled materials we needed. We then began making our lamps in school!



I forgot to include in my plan where I would like the wires to go but have changed it now.



We tested and evaluated our battery operated lights!

I wish I had thought more about how the light will shine through - I should've made more holes.

I love my lamp! It fits in with my bedroom really well.



**What I have learnt before:**

In DT I have learnt how to generate ideas from own experiences and plan what to do; to follow basic safety rules; and, to recognise what they have done well and what to improve.

**Forever Facts**

In a complete circuit, electricity can flow and the components will work. If there is a break in the circuit that prevents the electricity from flowing, the components will not work.

Key events and individuals in design and technology have helped shape the world.

Thomas Edison was a famous American inventor. He is best known for inventing 'domestic' lightbulbs to go in houses, and the electric power system that allows them to work.

**Skills**

Collect and use information to generate ideas.

Understand designs must meet a range of criteria and constraints.

Add electricity to make light.

Combine materials for strength and to improve how the product looks.

Develop their designs through their own reflection and the evaluation of others.

**Culture capital:** The jobs it can be used in are: electricians, engineers.

**Exciting Books****Our Endpoint**

To make and evaluate a battery operated light.

**Subject Specific Vocabulary**  
*Links to science*

design	A plan or drawing produced to show the look and function of something before it's made.
evaluate	Evaluating is the process of deciding if you've done something the best way, and looking at what could be improved.
electricity	The flow of an electric current through a material, e.g. from a power source through wires to an appliance.
battery	A device that stores electrical energy as a chemical.
circuit	A pathway that electricity can flow around. It is based around wires and a power supply. Examples of components (parts) you can add in to a circuit are bulbs, switches, buzzers and motors.
electrical conductor	A conductor of electricity is a material that will allow electricity to flow through it.
electrical insulator	Materials that are electrical insulators do not allow electricity to flow through them.