

Year 3 Spring 1 Project overview – Let it shine!

Big Idea: What is a torch?

In this project, children develop their design skills to create their own reading torch. Using their scientific knowledge of electricity to support them, their torch must meet specifications of having a switch and being made of appropriate materials. Children evaluate their torch at the Year 3 sleepover, when reading before lights out!

HOOK: The Torch - exploring torches history and development.

OUTCOME: Year 3 sleepover

Applied Literacy:

Factual paragraphs - biographical information about David Missell

Scientific conclusions - Electricity

Information Text - a non-fiction text about light.

Applied Mathematics:

Shape - 3D shape properties (choices for making)

Pupil Premium Curriculum Enhancement:

Electrician/electrical engineer aspirational talk.

Practical elements linked to electricity - take apart items to look at components.

Key Concept Design and Technology - Mechanisms and Construction

Research: -What is a torch? Explore the history and development of technology of the torch.
-Use scientific learning and knowledge about **mechanisms** (*switches*) and **properties of materials** to support their decisions in designing - eg choices of material for casing, switch, lens, reflector.

Design: Children learn to create a **3-angled** final design.

Make: Explore techniques of **joining** materials when constructing and **choose** preferred method for joining the components of their final torches.

Evaluate: Reflect on overall quality of torch **construction**, how it meets design specifications and its successful use at the sleepover.

Science - Physics - Electricity

Identify appliances that run on electricity.

-Construct simple series circuits - identifying and naming parts - cells, wires, bulbs, switches and buzzers

-Role of the switch to open and close a circuit - predict whether a lamp lights in a simple series circuit.

-Recognise common conductors and insulators, and associate metals being good conductors.

SMSC and Learning Values:

To persevere - children will focus on what to do when things don't work and how to adapt whilst making torches.

Cultural - British history of inventors - David Missell and the invention of the battery powered hand held torch.

Community links/ Enterprise/

Experiences:

Children given the challenge of creating a working torch in a design brief.

Year 3 sleepover - spend a night away from home.

Let it shine!

Big Idea: What is a torch?

What I already know...

That **materials** have different **properties** and can be used for different purposes. (Y2)

To use a design specification to create **initial ideas**. (Y3 - Come Dine With Me)

To create a design for a **target market** -smoothie design. (Y3)



In this **design project**, you have the challenge to create your own handheld reading torch to use at our Year 3 sleepover. Include a switch **mechanism** to ensure your torch can turn on and off.

SJS Design Engineers

Mechanisms and Construction

I will learn...

- how the **technology** of the torch has developed over time.
- to use **research**, including science electricity learning, to support my designs.
- that material can be **joined** in a range of ways.
- how to create a design that includes different angles.
- how to include a **switch** as a mechanism to make a torch work.
- how to **evaluate** against **design specifications**.

Key Vocabulary:

Torch

Mechanism

Switch

Material

3-angles

specification

Our Personal Skills:

