Medium Term Plan **Subject D&T** **Year Group: Year 4** **Term: Summer**

Topic: Electrical systems: Torches

National Curriculum Objectives which are covered in this unit:

Design

Pupils should be taught to:

- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make

Pupils should be taught to:

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

Evaluate

Pupils should be taught to:

- Investigate and analyse a range of existing products.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical knowledge

Pupils should be taught to:

- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

Lesson sequence - include the key concept, L.O. and brief description of lesson

WALT: learn about electrical items and how they work. Exploring the difference between electrical and electronic and revisiting how to create a simple circuit. Success criteria • I can identify electrical products. • I know what electrical conductors and insulators are. • I know that a battery contains stored electricity and can be used to power products. **Pupils with secure understanding indicated by:** identifying electrical products; explaining why electrical products are useful; making a working switch. **Pupils working at greater depth indicated by:** identifying the features of electrical products; suggesting other ways to make a switch using different conductors.	**WALT: analyse and evaluate electrical products.** Evaluating a range of torches and identifying the features of a torch. Success criteria • I can identify the features of a torch. • I understand how a torch works. • I can say what is good and bad about different torches. • I understand what is important in torch design. **Pupils with secure understanding indicated by:** identifying the features of a torch and how it works; describing what makes a torch successful. **Pupils working at greater depth indicated by:** explaining which features are important to all torches and which are tailored to the target audience; generating creative suggestions for how the components could be made.	**WALT: design a product to fit a set of specific user needs.** Designing a torch by incorporating features identified in the previous lesson. Success criteria • I can factor in who my product is for in my design criteria. • I can design a torch which satisfies both the design and success criteria. **Pupils with secure understanding indicated by:** writing design criteria for a specific user; creating suitable designs that fit the success criteria and their own design criteria. **Pupils working at greater depth indicated by:** using the outcome of the previous lesson's evaluation task to improve their design; adding special features specifically designed for their user.	**WALT: make and evaluate a torch.** Building a circuit and housing for torches. Success criteria • I can make a working circuit with a switch. • I can use appropriate equipment to cut and attach materials. • I can assemble a torch according to my design criteria. • I can assemble a torch which satisfies the success criteria. • I can test my torch to evaluate its success. **Pupils with secure understanding indicated by:** assembling a functioning torch with a working circuit and switch according to their design criteria. **Pupils working at greater depth indicated by:** adding special features to suit their client; discussing how these components could be used in other products.
Prior learning *List year groups and topics with connected learning*			
Future learning *List year groups and topics with connected learning*	Year 6 Electrical systems – Steady hand game.		
Key vocabulary to be explicitly taught	battery bulb buzzer circuit diagram component conductor electrical item electricity electronic item insulator series circuit switch target audience test torch wire		

Cross-curricular links	**Science** **Electricity** Pupils should be taught to: • 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. **History** Pupils should be taught about: • A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066.
Enrichment *Give visit/visitor/first hand experience and focus*	
Useful websites/resources	**Knowledge organiser: DT - Y4 Torches** **Vocabulary display: Electrical systems: Torches**