EDEN Academy Trust
Working together to make a difference

Design Technology Curriculum – Cycle B
Upper Key Stage 2 – Spring Term

Theme – Mechanisms and Electrical systems

Enquiry Question – How will you make your plastic fantastic?

National Curriculum Coverage

When designing and making, pupils should be taught to:

Design

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups

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

Make

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

Investigate and analyse a range of existing products

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

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

Apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

Understand and apply the principles of a healthy and varied diet

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

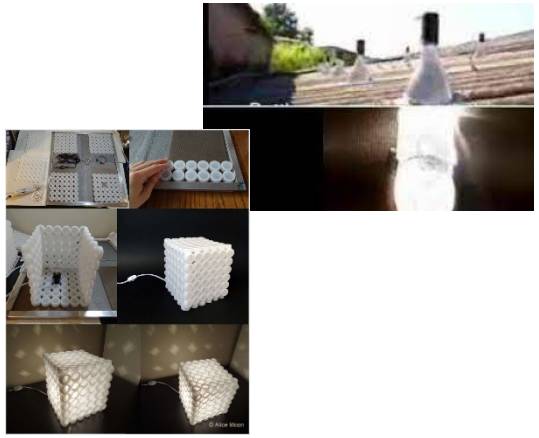
Generic Knowledge and Skills

Developing, planning & communicating ideas • To use a range of information to inform their design.	

• To know that market research needs to be gathered and must inform plans. • To produce a detailed step-by-step plan including labelled sketches that refer to the views of others (i.e topping chosen as it was the most popular in class) • To make labelled drawings from different views to show specific features. • To justify their plan to someone else. • To consider culture and society in their designs. • To work within constraints i.e. budget, available resources • To follow and refine their plan if their first attempt fails. • To use Purple Mash – 2Design to create a 3D image of their product. **Working with tools, equipment, materials and components to make quality products** • To show a good level of expertise when using a range of tools and equipment. • To use tools, equipment and materials precisely. • Accurately apply a range of finishing techniques. • To explain how their product (and finish) will appeal to the audience. • To demonstrate resourcefulness when tackling practical problem • To aim to make and to achieve a good quality product **Evaluating processes and products** • To evaluate how innovative products are • To evaluate existing products including the materials they are made from and their sustainability • To consider how much products that they make may cost to produce • To evaluate their work both during and at the end of the making process • To identify what would improve their product including making changes to resources • To seek evaluation of their product from others as well as themselves. • To evaluate appearance and function against the original criteria. • To begin to explore how key designers in DT have shaped the world • To identify different information needed to make their product better	
Specific Knowledge and Skills	Vocabulary
Electrical Components • To know how to create a circuit that contains a light bulb and a switch. • To think of ways in which different circuit types (one battery or two etc) can change the look of their product. • To include a solar module in a circuit.	

- *To use an algorithm to control their product. (Computing)*

***(Tools:** crocodile clips, bulb, bulb holder, battery, buzzer, switch, solar module)*



Construction

- To make measurements accurate to ensure that everything is precise.
- To ensure that their product is strong and fit for purpose.
- **To join using a range of temporary and permanent fixings**
- To ensure the electronics are housed within their product accurately.