

The Northway Curriculum

Year Four Design Technology

Unit one

Electrical Systems- Simple Circuits



LO: How does a torch work and what are its parts?

LO: Designing a torch based on a specification

LO: Making the body of the torch

LO: Making the reflector

LO Making the electrical components
(Bulb, batteries, switch and wiring)

LO: Evaluating my design

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Balance Targets

Designing

- Develop design criteria that are aimed at particular individuals/groups
- Generate ideas through discussion and sketches etc.

Making

- Select appropriate materials and components
- Select and use tools appropriately
- Measure, join and cut with some accuracy
- Make a working circuit, including a switch and bulb

Evaluating

- Investigate a range of torches and their parts
- Evaluate their design and suggest ways to improve their design/final model

Technical Knowledge and Understanding

Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.

- Apply their understanding of computing to program and control their products.
- Know and use technical vocabulary relevant to the project.

Technical Vocabulary

series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip

Prior Learning

- Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers.
- Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.

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Year Four Design Technology Unit Two Shell Structures



LO: Investigate and dismantle cardboard boxes. How are they made?

LO: Design a prototype shell structures to protect the egg

LO: Using a ruler, saw, bench block and glue gun to make a wooden square.

LO: Make an accurate cube frame using ruler, saw, bench block and glue gun

LO: Make the outside of the box and add protective material

LO Testing the prototype boxes and evaluating the design/model

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Design

Can generate realistic ideas focussing on the needs of the user.

Can develop ideas based on discussion and analyse of existing products.

Making

Can measure accurately

Can saw wood accurately

Can join wood together neatly and accurately.

Explain their choice of protective material according to functional properties.

Evaluating

Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.

- Test and evaluate their own products against design criteria and the intended user and purpose.

Technical Knowledge and Understanding

Develop and use knowledge of how to construct strong, stiff shell structures.

- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.

- Know and use technical vocabulary relevant to the project.

Technical Vocabulary

shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong,

Prior Learning

- Experience of using different joining, cutting and finishing techniques with paper and card.
- A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.

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Unit Three

Healthy and Varied Diet



LO: Investigate the Eatwell plate. Which foods fit in each group?

LO: Design a healthy packed lunch. What things could we make for a mix and match packed lunch?

LO: Children to make each element of the packed lunch.

LO: Children to try each element and evaluate it for appearance, taste and nutritional content

LO:

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Design

-Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.

-Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

-Plan the main stages of a recipe, listing ingredients, utensils and equipment.
-Select and use appropriate utensils and equipment to prepare and combine ingredients.
-Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluation

-Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
-Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Technical Knowledge and Understanding

Know how to use appropriate equipment and utensils to prepare and combine food.

- Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.
- Know and use relevant technical and sensory vocabulary appropriately.

Technical Vocabulary

name of products, names of equipment, utensils, techniques and ingredients
texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury
hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet

Prior Learning

- Know some ways to prepare ingredients safely and hygienically.
- Have some basic knowledge and understanding about healthy eating and *The eat-well plate*.
- Have used some equipment and utensils and prepared and combined ingredients to make a product.