



Claremont Primary and Nursery School Design and Technology Curriculum

Year 4: Mighty Mountains – Make an adventure map – How can I control a robot?

NC Link: Programming

Objectives:

- Be able to program and control floor robots
- Be able to develop ideas about an adventure map through discussion
- Be able to research how a range of materials affect the movement and control of floor robots
- Be able to plan and design an adventure map
- Be able to use appropriate materials to create an adventure map
- Be able to monitor a floor robot
- Be able to evaluate my finished adventure map

Substantive Knowledge:

Design

- Use research of existing products to develop design criteria for their own products.
- Design innovative, functional and appealing products that are fit for purpose.
- Generate and develop their ideas through annotated sketches and prototypes.
- Generate more than one idea for a product
- Plan which materials and tools will be needed

Make

- Make a product using construction materials.
- Use mechanical systems in their products e.g. gears and pulleys.
- Select from and use a range of tools and equipment.
- Select from and use a range of construction materials, using their functional properties and what they look like.
- Order the stages of making

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their product against their design criteria.
- Consider how they could improve their work.
- Where appropriate, consider how significant events and individuals in DT have helped to shape the world.

Technical knowledge

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

Disciplinary knowledge (Think like a designer):

- Measuring accurately, marking out, cutting, folding, scoring,
- Using patterns and templates with more than 2 pieces
- Understanding what makes a quality finish- collage, printing, drawing, use of font, size, colour, layout
- Understanding how products can be driven by electricity
- Understanding of how to control speed and direction

Key Vocabulary:

product, make, create, ideas, build, model, materials, strengthen, reinforce, stiffer, control, program, system, input, output



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Year 4: Castaway – Make a moving well – How can I make a well move and light up?

NC Link: Structures and Electricity

Objectives:

- Be able to make and represent different types of circuits
- Be able to make and use switches
- Be able to use gears and pulleys to create movement
- Be able to develop design criteria for a moving well which lights up
- Be able to select materials and components to make a well
- Be able to create a well-finished moving well
- Be able to complete a detailed evaluation of my moving well

Substantive Knowledge:

Design

- Use research of existing products to develop design criteria for their own products.
- Design innovative, functional and appealing products that are fit for purpose.
- Generate and develop their ideas through annotated sketches and prototypes.
- Generate more than one idea for a product
- Plan which materials and tools will be needed

Make

- Make a product using construction materials.
- Use mechanical systems in their products e.g. gears and pulleys.
- Select from and use a range of tools and equipment.
- Select from and use a range of construction materials, using their functional properties and what they look like.
- Order the stages of making

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their product against their design criteria.
- Consider how they could improve their work.
- Where appropriate, consider how significant events and individuals in DT have helped to shape the world.

Technical knowledge

- Understand and use electrical systems
- Apply their understanding of how to strengthen, stiffen and reinforce structures.

Disciplinary knowledge (Think like a designer):

- Measuring accurately, marking out, cutting, folding, scoring,
- Using patterns and templates with more than 2 pieces
- Relate a mechanism to its purpose and select for a desired type of movement
- Understanding what makes a quality finish- collage, printing, drawing, use of font, size, colour, layout
- Using a widening range of decorative techniques

Key Vocabulary:

product, make, create, ideas, build, model, materials, strengthen, reinforce, components, stiffer, gears, movement, levers, wheels, sliders, axels, functional, aesthetic, mechanical systems, pulleys



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Year 4: Egyptian Escapades – Make breads and dips – How can we make bread and dips for a picnic?

NC Link: Cooking and Nutrition

Objectives:

- Be able to investigate and analyse existing products according to their characteristics
- Be able to develop design criteria
- Be able to add original ideas for a dip and bread based on the design criteria
- Be able to select ingredients and kitchen equipment to help follow a recipe
- Be able to shape dough
- Be able to knead and bake
- Be able to evaluate a product – did it meet the design brief?

Substantive Knowledge:

Design

- Use research of existing products to develop design criteria for their own products.
- Design innovative, functional and appealing products that are fit for purpose.
- Generate and develop their ideas through annotated sketches and prototypes.
- Generate more than one idea for a product
- Plan which materials and tools will be needed

Make

- Understand the principles of a healthy diet.
- Follow a recipe to prepare and make a savoury dish (with a heat source).
- Measure ingredients, for the savoury dish, using scales.
- Order the stages of making

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their product against their design criteria.
- Consider how they could improve their work.
- Where appropriate, consider how significant events and individuals in DT have helped to shape the world.

Technical knowledge

- Understand and apply the principles of a healthy diet
- Know that a healthy diet is made up of a variety and balance of different food and drink

Disciplinary knowledge (Think like a designer):

- Use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading
- Be able to follow a recipe
- Prepare ingredients hygienically
- Measure accurately to the nearest gram

Key Vocabulary:

product, make, create, ideas, savoury, sweet, recipe, appearance, peeling, chopping, grating, mixing, spreading, kneading, baking, prepare, temperature, taste, texture, hygiene, safety, measure, gram, kilogram, heat/hot, oven, hob, cook, utensils