Claremont Primary and Nursery School Design and Technology Curriculum

Year 6: World War 2 – Recycle and repurpose old clothes – How can I recycle and repurpose old clothes?

NC Link: Textiles

Objectives:

- Be able to create design criteria for a repurposed Christmas decoration
- Be able to clearly communicate my final design using a prototype
- Be able to make a paper template for a Christmas decoration
- Be able to use different types of stitches and choose the best one for a Christmas decoration
- Be able to organise ideas into a step by step plan to make a Christmas decoration
- Be able to select decorative techniques and fastenings according to their functional properties and aesthetic qualities
- Be able to evaluate my product

Substantive Knowledge:

Design

- Design innovative, functional and appealing products that are fit for purpose.
- Undertake research to inform the design criteria and process. This may include surveys and interviews.
- Use prototypes (and pattern pieces where appropriate)
- Work within constraints. Refining and justifying plans as necessary

Make

- Make a product using construction materials.
- Select from and use a range of tools and equipment to cut, shape and finish a product
- Select from and use a range of construction materials, using their functional properties and what they look like
- Consider the aesthetic qualities and functionality of the product, amending as appropriate when making

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their ideas and product against their design criteria.
- Consider the views of others and 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 how to strengthen and reinforce material in order to offer protection to the contents
- Apply knowledge of a range of stitches to join materials and fastenings

Disciplinary knowledge (Think like a designer):

- Making accurate patterns and templates
- Using a range of tool and techniques for marking out, measuring and cutting a range of materials
- Using known skills e.g. applique, cutting, embellishing, fabric gluing, stencilling
- Distinguish between functional and decorative product

Key Vocabulary:

make, model, create, prototype, ideas, materials, reinforce, functional, aesthetic, sew, stitch, fabric, applique, embellish, stencil

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Year 6: Mexico! – Make a Quesadilla – How can I make a quesadilla for a Mexican party?

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 quesadilla based on the design criteria
- Be able to select ingredients and kitchen equipment to help follow a recipe
- Be able to evaluate a product – did it meet the design brief?

Substantive Knowledge:

Design

- Design innovative, functional and appealing products that are fit for purpose.
- Undertake research to inform the design criteria and process. This may include surveys and interviews.

Make

- Understand the principles of a healthy diet.
- Prepare and cook a savoury dish, using seasonal ingredients linked to knowledge of Mexican cuisine.

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their ideas and product against their design criteria.
- Consider the views of others and 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.
- Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed
- Know recipes can be adapted
- Know that food contains different substances- nutrients, fibre etc
- Know food can be grown, reared or caught
- Understand the importance of storage and handling of ingredients

Disciplinary knowledge (Think like a designer):

- Use a range of sharp equipment safely
- 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
- Learn to control the temp of oven or hob.

Key Vocabulary:

make, create, peeling, hygiene, cutting, heat source, kneading, baking, grating, prepare, mixing, healthy, safety, fruit, vegetable, nutrient, fibres, sweet, savoury, nutrients, diet, protein, carbohydrates

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Year 6: Survival of the Fittest – Make a Mars Rover – How can I make a moving Mars Rover?

NC Link: Mechanisms

Objectives:

- Be able to research ideas about different vehicles to inform my design
- Be able to explain how a simple lever and gear mechanisms works
- Be able to select materials to make a simple lever and gear mechanism
- Be able to research and develop design criteria to inform my moving vehicle design
- Be able to build a framework accurately using a range of tools and equipment
- Be able to understand and make a mechanical system
- Be able to evaluate my vehicle

Substantive Knowledge:

Design

- Design innovative, functional and appealing products that are fit for purpose.
- Undertake research to inform the design criteria and process. This may include surveys and interviews, data etc.
- Use prototypes (and pattern pieces where appropriate), exploded diagrams (that show how products fit together) and computer aided software to represent designs.
- Work within constraints. Refining and justifying plans as necessary

Make

- Make a product using construction materials.
- Select from and use a range of tools and equipment to cut, shape and finish a product
- Select from and use a range of construction materials, using their functional properties and what they look like.
- Use a series circuit within their product.
- Consider the aesthetic qualities and functionality of the product, amending as appropriate when making

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate their ideas and product against their design criteria.
- Consider the views of others and 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 mechanical structures in their products e.g. levers and gears.
- Apply their understanding of how to strengthen, stiffen and reinforce structures.

Disciplinary knowledge (Think like a designer):

- Making accurate patterns and templates
- Using a range of tool and techniques for marking out, measuring and cutting a range of materials
- Knowing that structures can fail when loaded
- Knowing how to reinforce structures and to research information about this from a range of sources
- Using a variety of temporary and permanent joining techniques, including framework, materials and textiles.
- Assembling components to make working models
- Developing a structure with finishing techniques
- Distinguish between functional and decorative product

Key Vocabulary:

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