Claremont Primary and Nursery School Design and Technology Curriculum

Year 3: Rainforests – Make a bridge to aid travel in the rainforest – How can I make the strongest bridge?

NC Link: Structures

Objectives:

- Be able to investigate and evaluate existing structures
- Be able to use tools to join materials by cutting, shaping, joining and finishing
- Be able to use practical skills to create bends
- Be able to design my bridge structure and share my ideas using an annotated sketch
- Be able to select and use materials to make a strong bridge with a bend
- Be able to evaluate my bridge against the design criteria

Substantive Knowledge:

Design

- Research existing products to inform their own product designs.
- Help to generate the success criteria for their product.
- Generate designs with annotated sketches.
- Develop their ideas through discussion.
- Does their design fit the success criteria? Is it fit for purpose and for the target audience?
- Consider the tools and equipment needed

Make

- Make a product using a range of materials.
- Select from a range of materials, based on their functional properties and what they look like.
- Select from and use a range of tools and equipment to cut and measure accurately.
- Explain what is being made and why the audience will like it

Evaluate

- Investigate a range of existing products.
- Evaluate their product against the 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 how to strengthen, stiffen and reinforce materials

Disciplinary knowledge (Think like a designer):

- Work safely with a range of tools
- Extend understanding of ways of fixing and joining components and selecting most appropriate for a given task
- Understanding how to make stable structures - rolling, folding, and layering, reinforcing corners, cutting a mitre joint
- Know about and apply different finishing techniques –collage, paint, cut out shapes, decoupage, varnishing for durability.

Key Vocabulary:

purpose, user, design, draw, aesthetic, brief, tools, equipment, safety, objects, join, assemble, strengthen, stiffen, reinforce, components, measure, like, dislike, improve, function, properties

Claremont Primary and Nursery School Design and Technology Curriculum

Year 3: Extreme Earth – Make a moving volcano picture – How can I make a picture move?

NC Link: Mechanisms

Objectives:

- Be able to investigate mechanical systems
- Be able to make mechanical systems which use levers and linkages
- Be able to develop design criteria to help design a moving picture
- Be able to use sketches to communicate ideas
- Be able to use prototypes to develop my ideas
- Be able to carefully select materials and use different techniques to create a high-quality moving picture
- Be able to evaluate my picture in terms of the function of the levers and linkages

Substantive Knowledge:

Design

- Research existing products to inform their own product designs.
- Help to generate the success criteria for their product.
- Generate designs with annotated sketches.
- Develop their ideas through discussion.
- Does their design fit the success criteria? Is it fit for purpose and for the target audience?
- Consider the tools and equipment needed
- Develop an understanding of how lever and linkages work

Make

- Make a product using a range of materials.
- Select from a range of materials, based on their functional properties and what they look like.
- Select from and use a range of tools and equipment to cut and measure accurately.
- Explain what is being made and why the audience will like it
- Incorporate a lever and linkage within a product

Evaluate

- Investigate a range of existing products.
- Evaluate their product against the 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 how a levers and linkages mechanism works

Disciplinary knowledge (Think like a designer):

- Work safely with a range of tools
- Extend understanding of ways of fixing and joining components and selecting most appropriate for a given task
- Understanding how pneumatic systems work
- Revising how simple levers work
- Know about and apply different finishing techniques –collage, paint, cut out shapes, decoupage, varnishing for durability.

Key Vocabulary:

purpose, user, design, draw, aesthetic, brief, tools, equipment, safety, objects, join, assemble, lever, linkage, mechanism, components, measure, like, dislike, improve, function

Claremont Primary and Nursery School Design and Technology Curriculum

Year 3: Italian Escape – Make a pizza – How could we make a pizza for the school dinner menu?

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

Substantive Knowledge:

Design

- Research existing products to inform their own product designs.
- Help to generate the success criteria for their product.
- Generate designs with annotated sketches.
- Develop their ideas through discussion.
- Does their design fit the success criteria? Is it fit for purpose and for the target audience?
- Consider the tools and equipment needed

Make

- Understand what makes a healthy diet.
- Follow a recipe to prepare a savoury dish.
- Measure and weigh ingredients appropriately.
- Explain what is being made and why the audience will like it

Evaluate

- Investigate a range of existing products.
- Evaluate their product against the 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.

Disciplinary knowledge (Think like a designer):

- Work safely with a range of tools
- Understanding of food preparation techniques (tearing, cutting, slicing, grating) and ways of combining foods to make a product for a particular purpose
- Combining foods on the basis of taste, appearance and texture
- Understanding of different food groups within a healthy and balanced diet

Key Vocabulary:

purpose, user, design, draw, aesthetic, brief, hygiene, equipment, safety, like, dislike, improve, peeling, hygiene, cutting, slicing, heat, grating, prepare, mixing, healthy, safety, fruit, vegetables, nutrient, fibres, diet