Long-term overview for Design Technology

YEAR 7

Create a structure to reflect an aspect of European life which could become a European landmark out of recycled materials

Know enough about European landmarks and lifestyle to create a structure to represent it

Create initial designs of different ideas for discussions

Listen to views of others before deciding on final idea

Use a range of materials (from waste materials) to make the structure

Evaluate the final structure and explain what it represents and where it would be placed

Designing

- Competently research products similar to the one they are intending to design and evaluate strengths and weakness to be incorporated into their own design.
- Research and use ICT (google) where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- With growing confidence, apply a range of finishing techniques including those from art and design.

Making

- 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.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Make a prototype before making a final version
- Carry out finishing techniques (including lights) to enhance the appearance and function of their product

Evaluating

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria

Long-term overview for Design Technology

YEAR 7

Create a textile product which tells a story and incorporates fabric sewn onto fabric

Know enough about the Bayeux tapestry to gain a good insight into what is required

Create initial designs of an aspect of history studied that can be created using different fabrics

Consider the views of others before proceeding to the making stage

Use a range of stitching techniques, including applique, to create the end product

Evaluate the final product, taking account of the original design and explain where variations have occurred

Designing

- Competently research the Bayeux tapestry to gai n ideas lined to the intended design and evaluate strengths and weakness to be incorporated into own design.
- Research and use ICT where appropriate
- Produce a detailed, step-by-step plan
- Explain how a product will appeal to a specific audience and how it meets the purpose
- With growing confidence, apply a range of finishing techniques including those from art and design.
- Start to appreciate how make products cost to make.

Making

- Select appropriate materials, tools and technique (e.g. cutting, shaping, joining and finishing) accurately.
- Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment
- Make a prototype before making a final version
- Carry out finishing techniques to enhance the appearance and function of their product

Evaluating

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Use a range of sewing techniques, including applique and various stitches.

Long-term overview for Design Technology

YEAR 7

Create a water mill system for a developing country which incorporates gears

Know enough about a way a watermill works

Create initial design taking account of how gears work

Take time to ensure that the gear system is working well and stands up to continuous use

Make a water mill, that incorporates gears, and show it working

Evaluate the water mill against original ideas and seek views of others about its success

Designing

- Competently research how water mills work.
- Research and use ICT where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- Produce a detailed, step-by-step plan
- Create annotated 3D designs of their design on isometric or squared paper from a range of viewpoints.
- With growing confidence, apply a range of finishing techniques including those from art and design.
- Start to appreciate how much the product costs to make.

Making

- Name and use a range of tools and equipment competently
- Select appropriate materials, tools and technique (e.g. cutting, shaping, joining and finishing) accurately.
- Incorporate mechanical systems (such as gears) to create movement in their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Make a prototype before making a final version
- Carry out finishing techniques to enhance the appearance and function of their product

Evaluating

- Evaluate a product against original design specifications and by carrying out tests.
- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Use a gear system within the watermill produced.

Long-term overview for Design Technology

YEAR 8

Create a vehicle capable of moving over different terrain which incorporates more than one mechanical system

Know enough about a way a watermill works

Create initial design taking account of how gears work

Take time to ensure that the gear system is working well and stands up to continuous use

Make a water mill, that incorporates gears, and show it working

Evaluate the water mill against original ideas and seek views of others about its success

Designing

- When researching, be competent in discriminating as to what would be and would not be helpful for their intended product.
- Use market research of existing products to inform their design
- Follow and refine original plans, justifying it in a convincing way
- Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details
- Know how much products cost and make choices accordingly.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Construct products using permanent joining techniques.
- Use mechanical systems such as levers, pulleys and gears competently to create movement in their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Know which IT product would further enhance a specific product
- Use knowledge to improve a made product by strengthening, stiffening or reinforcing
- Know when a product they have made is improved by either the use of pulleys, levers or gears.

Long-term overview for Design Technology

YEAR 8

Create a camouflaged nomadic tent that would a suitable for a desert

Know what nomadic desert tents look like and appreciate how they are made

Create initial design taking account of both structure and design of the fabric used

Create a stable structure capable of withstanding strong winds

Create a camouflaged design for the fabric part of the tent

Evaluate the tent taking account of both structure and camouflaged textile

Designing

- When researching, be competent in discriminating as to what would be and would not be helpful for their intended product.
- Follow and refine original plans, justifying it in a convincing way
- Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details
- Show that culture and society is considered in plans and design specification.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Construct products using permanent joining techniques.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment.
- Pin, sew and stitch materials together to create a product

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Use knowledge to improve a made product by strengthening, stiffening or reinforcing
- Use a range of sewing techniques to improve the product made

Long-term overview for Design Technology

YEAR 8

Create a traffic light system that involves the use of IT

Know how a traffic light system works

Create initial design taking account of what is available to them, including IT

Create a prototype to check that their ideas works

Make a traffic like system that follows the traditional system used in this country

Evaluate the traffic light system, taking account of what was difficult to achieve

Designing

- Competently research how traffic light system works.
- Research and use ICT where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- Produce a detailed, step-by-step plan
- Start to appreciate how much the product costs to make.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Know how to use any tool (including IT) correctly and safely
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Know which IT product would further enhance a specific product
- Use electrical systems correctly and accurately to enhance a given product