



Intent: DT offers inspiring opportunities for students to develop imagination, creativity and problem solving skills in practical ways, whilst producing products for themselves and others. Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts. Pupils should be taught how to cook and apply the principles of nutrition and healthy eating. DT should foster in pupils a love of cooking and the life skills to enable students to make choices to feed themselves affordably and well in later life.

Intent

Technical Knowledge

Build structures, exploring how they can be made stronger, stiffer and more stable
Explore and use mechanisms in their products.
Use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from

Design

Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Skills Progression / Impact

Pathway 1 (Engagement Step 1 – 3)
Opens eyes for brief period of time when encountering stimulating events
Accepts hands being guided over textural experiences
Reaches for visually appealing objects
Explores a desired object for up to 10 seconds

Pathway 2 (Progression Step 1 – 3)
Requests a tool or object for a purpose
Communicates what they want to make, working in 2d and 3d
Makes simple drawings to communicate their ideas

Pathway 3 (Progression Step 4 – 5)
Chooses tools and materials generally appropriate to the task
Writes captions and labels on their design drawings
Creates simple plans for their designs

Make

select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Skills Progression / Impact

Reacts to physical contact/textures with minor physiological changes
Grasps objects intentionally when they have been placed in their hands
Transfers from one hand to the other

Moves an object in a variety of different ways
Builds with a range of construction materials used in a variety of ways
Follows a simple pictorial plan to recreate a model

Makes a product or structure using simple tools and construction materials
Demonstrate safe use of tools
Combines construction materials while considering the final appearance of the product

Evaluate

explore and evaluate a range of existing Products. Evaluate their ideas and products against design criteria

Skills Progression / Impact

Responds to pleasant smells/tastes with sucking motions
Turns head to follow stimulating experiences
Reacts excitedly to an activity when offered a variety of tactile experiences

States what they notice in simple terms and can say what they like/don't like
Explains what their product does and who it's for
Identifies simple processes to improve their design

Suggests a way to improve their product
Compares their completed product to the original design
Suggests some ways they could improve a specific part of the product/design

Impact

Students are prepared for the next stage of their STEM pathway and are ready to:

Use research and develop design criteria, aimed at particular individuals or groups.

Select from and use a wider range of tools and equipment to perform practical tasks, accurately. Select from and use a wider range of materials, including construction materials, textiles and ingredients.

Investigate and analyse a range of existing products evaluate their ideas and products against their own design. Understand how key events and individuals in design and technology have helped shape the world.

Implementation

Year A

Half term 1:

- Boats

Half term 2:

- Moving pictures/toys

Half term 1:

- Picnics

Half term 2:

- Kites

Half term 1:

- Green houses

Half term 2:

- Great bread bake off

Year B

Half term 1:

- Moving pictures/toys

Half term 1:

- Battery operated lights

Half term 2:

- Edible gardens

Half term 1:

- Recycling

Half term 2:

- Winches and mechanics



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Intent Technical Knowledge

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products. Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Design

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Skills Progression / Impact

Pathway 1 (Engagement Step 1 – 3)
Opens eyes for brief period of time when encountering stimulating events
Accepts hands being guided over textural experiences
Reaches for visually appealing objects
Explores a desired object for up to 10 seconds

Pathway 2 (Progression Step 1 – 4)
Requests a tool or object for a purpose
Communicates what they want to make, working in 2d and 3d
Makes simple drawings to communicate their ideas
Chooses tools and materials generally appropriate to the task

Pathway 3 (Progression Step 5 – 7)
Writes captions and labels on their design drawings
Creates simple plans for their designs
Designs or makes a product using knowledge from previous work
Takes into account some of the design criteria
Gathers information about the needs or wants of a particular group or individual to aid their design

Make

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
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

Skills Progression / Impact

Reacts to physical contact/textures with minor physiological changes
Grasps objects intentionally when they have been placed in their hands
Transfers from one hand to the other

Moves an object in a variety of different ways
Builds with a range of construction materials used in a variety of ways
Follows a simple pictorial plan to recreate a model
Makes a product or structure using simple tools and construction materials

Demonstrate safe use of tools
Combines construction materials while considering the final appearance of the product
Measures components in their design product with some care
Chooses materials to fit the aesthetic quality of their design
Assembles or joins parts of their product successfully

Evaluate

Investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world

Skills Progression / Impact

Responds to pleasant smells/tastes with sucking motions
Turns head to follow stimulating experiences
Reacts excitedly to an activity when offered a variety of tactile experiences

States what they notice in simple terms and can say what they like/don't like
Compares their completed product to the original design
Explains what their product does and who it's for
Identifies simple processes to improve their design
Suggests a way to improve their product

Suggests some ways they could improve a specific part of the product/design
Explains simply why the properties of a material make is suitable or unsuitable for a purpose
Researches some of the great designers in different areas of study

Impact

Students are prepared for the next stage of their STEM pathway and are ready to:

Use research and exploration, to identify and understand user needs
Identify and solve their own design problems.

Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentation.

Select from and use specialist tools, techniques, processes, equipment to aid manufacturing.
Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

Analyse the work of past and present professionals and others to develop and broaden their understanding. Investigate new and emerging technologies. Test, evaluate and refine their ideas taking into account the views of intended users and other interested groups.

Implementation

Year A

Design and write recipes– make and evaluate food.

Design and make models of artefacts.

Design. Plan and create shadow puppets.

Design, make and present mini-worlds.

Explore and use a range of materials.

Design and plan costume and makeup.

Design and plan a garden.

Year B

Design and make artefacts from historical times.

Label the materials of designs.

Use a variety of materials.

Design, plan, build and evaluate mini gardens and mini-worlds.

Design, Create, taste and evaluate a salad.

Design and create a junk robot of the future.

Explore recyclable materials.



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Intent Technical Knowledge

Understand and use the properties of materials to achieve functioning solutions
Understand how mechanical systems used in their products enable changes in movement and force
Understand how electrical and electronic systems can be powered and used in their products.
Apply computing and use electronics to embed intelligence in products that respond to inputs and control outputs using programmable components
Understand and apply the principles of nutrition and health
Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
Become competent in a range of cooking techniques

Design

Use research and exploration, to identify and understand user needs
Identify and solve their own design problems and apply knowledge and understanding to inform the design of innovative, functional, appealing products meet a need. Use a variety of approaches to generate creative ideas and avoid stereotypical responses.
Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations.

Skills Progression / Impact

Pathway 1 (Engagement Step 1 – 3)
Opens eyes for brief period of time when encountering stimulating events
Accepts hands being guided over textural experiences
Reaches for visually appealing objects
Explores a desired object for up to 10 seconds

Pathway 2 (Progression Step 1 – 4)
Requests a tool or object for a purpose
Communicates what they want to make, working in 2d and 3d
Makes simple drawings to communicate their ideas
Chooses tools and materials generally appropriate to the task

Pathway 3/4 (Progression Step 5–10)
Writes captions and labels on their design drawings
Creates simple plans for their designs
Designs or makes a product using knowledge from previous work
Takes into account some of the design criteria
Gathers information about the needs or wants of a particular group or individual to aid their design
Creates realistic designs which are suitable for the task
Annotates all designs with the materials and sizes, and refers to the processes that will be used
Uses research and exploration, such as the study of different cultures, to identify and understand user needs

Make

Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.
Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

Skills Progression / Impact

Reacts to physical contact/textures with minor physiological changes
Grasps objects intentionally when they have been placed in their hands
Transfers from one hand to the other

Moves an object in a variety of different ways
Builds with a range of construction materials used in a variety of ways
Follows a simple pictorial plan to recreate a model
Makes a product or structure using simple tools and construction materials

Demonstrate safe use of tools
Combines construction materials while considering the final appearance of the product
Measures components in their design product with some care
Chooses materials to fit the aesthetic quality of their design
Assembles or joins parts of their product successfully
Decides on the correct tools and processes to match the chosen material
Uses a range of tools, equipment, materials and components with precision, to consistently produce a well finished product
Selects from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate

Analyse the work of past and present professionals and others to develop and broaden their understanding. Investigate new and emerging technologies.
Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.

Skills Progression / Impact

Responds to pleasant smells/tastes with sucking motions
Turns head to follow stimulating experiences
Reacts excitedly to an activity when offered a variety of tactile experiences

States what they notice in simple terms and can say what they like/don't like
Compares their completed product to the original design
Explains what their product does and who it's for
Identifies simple processes to improve their design
Suggests a way to improve their product

Suggests some ways they could improve a specific part of the product/design
Explains simply why the properties of a material make is suitable or unsuitable for a purpose
Researches some of the great designers in different areas of study
Comments on the effectiveness of their product when evaluating their ideas and products
Evaluates their work regularly throughout the design and making process
Analyses the work of past and present professionals and others to develop and broaden their understanding

Impact

Students are prepared for the next stage of their STEM pathway and are ready to:

Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
To be inspired to pursue design interests further.

Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity.
To have developed necessary skills to enable them to pursue their love of design and cooking during the next stage of their educational journey.

To begin to understand that developments in design and technology, can impact on individuals and society and to be inspired by this to contribute to the design process during the next stage of their education.

Implementation

Year A

Design and create: Cookery aprons, also Xmas fayre products

Focus: Become proficient in exploring their ideas and creative work.
Cooking and nutrition:

Cooking and nutrition: Focus: **competence in cooking techniques**

Sculpture: Use a wider range of tools and techniques to develop understanding

Mazey art/ ARTS week. Design and make a costume/ outfit. Use research and exploration to identify users needs.

Cooking and nutrition: Focus: **competence in cooking techniques**

Year B

Cooking and nutrition: Focus: **competence in cooking techniques**

Christmas crafts: children to decide on products: **Product research, design and make**

Cooking and nutrition: Focus: **Cook a repertoire of savoury dishes** .

2D and 3D designs including digital art
Focus: Takes into account the design criteria

Cooking and nutrition: **focus: understanding the source and applying the principles of nutrition.** Mazey Arts week: 3d sculpture
Creates realistic designs and selecting materials