



DT Year 2 Curriculum Overview

DT must be covered in Autumn 2, Spring 2, Summer 2 and is alternated with Art (in remaining half terms)

The Big Picture

Within mechanisms, children will be exposed to different well-known designers and will begin to understand that mechanisms are researched, designed, made and evaluated. They will have the opportunity to research different products which use wheels and axles, for example, cars and other transportation vehicles. They will be given lots of time to explore wheels and axles and will give ample opportunities to explore and understand what wheels, axles and axle holders do and will have a go at fixing them to different products. Once shown and their confidence has developed, they will be given time to design a product using wheels and axles for a purpose, for someone or something. They will be supported to draw detailed designs, adding in detailed notes around their sketches. After the design stage, they will be asked to make their product, using a range of tools and techniques. They will be asked to mark out what they need and use rulers when appropriate. Once they have made their products, they will evaluate it. There will be lots of discussion around how closely their product meets their design criteria and how they feel their product could be improved.

What do we already know? What can we already do?

- Understand what a mechanism is – creates different types of movements
- Understand what sliders and levers do and use these
- Create sliders and levers
- Create mechanisms
- Use simple tools and equipment e.g. scissors, glue
- Manipulating card, other materials
- Know and use different fixing techniques

Year 2 DT- Mechanisms Wheels and Axles Autumn 2

NC objectives – Key Stage 1

Pupils should be taught:

Key stage 1

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 [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:

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

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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Specific unit objectives

Mechanisms – Wheels and Axles

- To know and understand what wheels, axles and axle holders are.
- To know the difference between fixed and free moving axles.
- To know how to fix wheels and axles to a product.

Research (objectives to cover all year)

- To explore some existing products- Which materials are used? How do the products work? Who made the product
- To express opinions about the different products they have researched.
- To research famous inventors and designers.

Design (objectives to cover all year)

- To develop their design ideas through discussion, observation, drawing and modelling with others.
- To identify a simple design criterion.
- To identify a clear purpose for what and who they intend to design and make.
- To draw simple sketches with notes to support their explanations and record their ideas.

Make (objectives to cover all year)

- To choose appropriate tools, equipment, techniques and materials from a wide range using the correct vocabulary to name them.
- To safely measure, mark out, cut and shape materials and components using a range of tools showing some accuracy.
- To use simple tools to prepare ingredients e.g. chopping, cutting, peeling and grating.
- To measure and weight ingredients using non- statutory measures.

Evaluate (objectives to cover all year)

- To discuss closely how their product meets their design criteria.
- To discuss how their product could be improved.

Key vocabulary and understanding for concept connectors

Mechanisms: Wheel, axle, fixed, free, design, make, cutting, joining, product, axle holder, rotate

Sticky Knowledge

- An axle holder is the part where an axle fits and rotates.
- An axle is a rod that enables a wheel to rotate.

Key Questions

- Do they know what wheels, axles and axle holders are? Can they make these work?
- Do they know the difference between fixed and free moving axles?
- Do they know how to fix them to a product?
- Can they research, design, make and evaluate a product?

Key designers/ architects/ inventors:

Henry Ford



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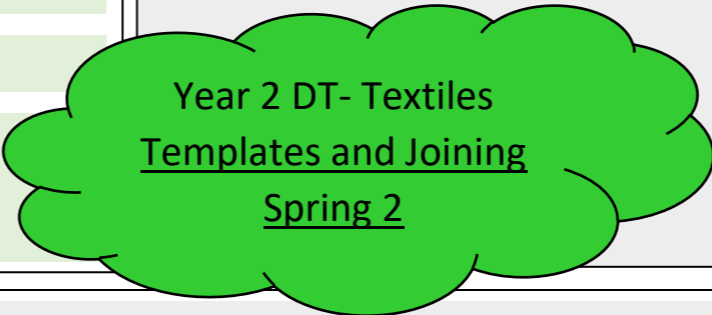
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The Big Picture

Within textiles, the children will have the opportunity to research different puppets made from different materials. They will practise using a template to draw around and cut out, as well as having lots of chances to sew to secure pieces together, before starting their final piece. They will design their puppet, based on the ones they have researched for a purpose, for someone or something. They will be supported to draw detailed designs, adding in detailed notes around their sketches. After the design stage, they will be asked to make their product, using a range of tools and techniques. They will be asked to mark out what they need and use rulers when appropriate. Once they have made their products, they will evaluate it. There will be lots of discussion around how closely their product meets their design criteria and how they feel their product could be improved.

What do we already know? What can we already do?

- Join two pieces of material together e.g. gluing, stapling, stitching
- Colour fabrics using paint and pens
- Add decorations to fabrics such as buttons and beads
- Use simple tools safely and correctly e.g. scissors, hole punch
- Join, assemble and combine materials using temporary methods e.g. glue and tape



NC objectives – Key Stage 1

Pupils should be taught:

Key stage 1

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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

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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Specific unit objectives

Textiles – Templates and Joining

- To group and sort fabrics according to their qualities.
- To use a simple running stitch to secure two pieces of fabric together.
- To know what a template is and use one to cut out a shape.
- To know and use a range of finishing techniques.

Research (objectives to cover all year)

- To explore some existing products- Which materials are used? How do the products work? Who made the product
- To express opinions about the different products they have researched
- To research famous inventors and designers.

Design (objectives to cover all year)

- To develop their design ideas through discussion, observation, drawing and modelling with others.
- To identify a simple design criterion.
- To identify a clear purpose for what and who they intend to design and make.
- To draw simple sketches with notes to support their explanations and record their ideas

Make (objectives to cover all year)

- To choose appropriate tools, equipment, techniques and materials from a wide range using the correct vocabulary to name them.
- To safely measure, mark out, cut and shape materials and components using a range of tools showing some accuracy.
- To use simple tools to prepare ingredients e.g. chopping, cutting, peeling and grating.
- To measure and weight ingredients using non- statutory measures.

Evaluate (objectives to cover all year)

- To discuss closely how their product meets their design criteria.
- To discuss how their product could be improved.

Key vocabulary and understanding for concept connectors

Textiles: template, mould, joining, running stitch, finishing technique, decoration, fabrics, constructed, fastenings

Sticky Knowledge

- A template is a mould used as a guide to make something.
- A running stitch is a stitch type used to secure two pieces of material together.

Key Questions

- Can they group and sort fabrics according to their qualities?
- Can they use a simple running stitch to secure two pieces of fabric together
- Do they know what a template is and use one to cut out a shape?
- Do they know and use a range of finishing techniques?

Key designers/ architects/ inventors:

N/A



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The Big Picture

Within food, children begin to understand that all foods must be farmed, grown, and caught and the processes behind this. They will begin to understand the principles of a balanced diet and it's importance to their overall healthy and well-being. They will know and learn to follow some healthy and safety procedures such as hand washing, wearing an apron and tying their hair back. Developed from EYFS and Year 1, children will know how to follow a simple recipe independently.

They will have the opportunity to research a well-known chef and look at different recipes and foods. They will design their own sandwich for a purpose, for someone or something. They will add notes and annotations. They will use a range of tools and methods to make their sandwich, following hygiene and safety procedures. Once made they will evaluate their product.

What do we already know? What can we already do?

- Understanding around where food comes from e.g. farm, grown
- Understanding around the need for a variety of foods in the diet
- An understanding around the importance of hand washing and wearing an apron when preparing food
- Know how to follow a recipe
- Know some famous chefs



NC objectives – Key Stage 1

Pupils should be taught:

Key stage 1

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When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
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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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking & Nutrition

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Specific unit objectives

Food- Preparing Fruits and Vegetables

- To understand that all food must be farmed, grown, or caught.
- To understand the principles of a balanced diet and its importance.
- To know and follow some safety procedures e.g. regular hand washing, wearing an apron, tying hair up.
- To follow a simple recipe independently.

Research (objectives to cover all year)

- To explore some existing products- Which materials are used? How do the products work? Who made the product.
- To express opinions about the different products they have researched.
- To research famous inventors and designers.

Design (objectives to cover all year)

- To develop their design ideas through discussion, observation, drawing and modelling with others.
- To identify a simple design criterion.
- To identify a clear purpose for what and who they intend to design and make.
- To draw simple sketches with notes to support their explanations and record their ideas.

Make (objectives to cover all year)

- To choose appropriate tools, equipment, techniques and materials from a wide range using the correct vocabulary to name them.
- To safely measure, mark out, cut and shape materials and components using a range of tools showing some accuracy.
- To use simple tools to prepare ingredients e.g. chopping, cutting, peeling and grating.
- To measure and weight ingredients using non- statutory measures.

Evaluate (objectives to cover all year)

- To discuss closely how their product meets their design criteria.
- To discuss how their product could be improved.

Key vocabulary and understanding for concept connectors

Food: fruit, vegetables, farmed, grown, caught, balanced diet, important, safety procedures, hand washing, tying hair up, apron, recipe, independently

Sticky Knowledge

- Foods must be farmed, reared and caught to be eaten.
- A balanced diet supplies the nutrients your body needs to work effectively.

Key Questions

- Do they understand that all foods must be farmed, reared or caught to be eaten?
- Do they understand the importance of a balanced diet?
- Do they know and follow some safety procedures?
- Can they follow a recipe independently?

Famous chefs:

Tom Kerridge, Nigella Lawson