



# DT Year 5 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 food, children will understand and name different foods and drinks that provide different substances the body needs to be healthy and active. They will begin to understand seasonality and the advantages of eating seasonal and locally produced food. They will develop an understanding that recipes can be adapted to change the appearance, taste, texture and aroma of foods.

They will use their research into famous designers and inventors and market research to inform the design of their product. They will generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design (CAD). After the design stage, they will be asked to make their product. They will apply their knowledge of materials and techniques to refine and rework their product to improve its functional properties. They will measure and weigh out their ingredients using different scales and will cook using a range of techniques including chopping, peeling, grating, slicing, mixing, spreading, kneading and baking. Once they have made their products, they will evaluate it. They will be given the opportunity to carry out appropriate tests on the product to test its effectiveness and to evaluate it against original criteria- does it have and is it fit for purpose?

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

- Understand what nutritional benefits different food types give us.
- Know where to find the nutritional information on packaging.
- Know which foods are grown in different countries and continents.
- Know and follow a range of safety and food hygiene procedures.
- Know some famous chefs



## NC objectives – Key Stage 2

### Pupils should be taught:

#### 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

#### 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

#### 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

#### Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

#### Cooking and Nutrition

- 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.

## Specific unit objectives

### Food- Celebrating Culture and Seasonality

- To understand and name different foods and drinks that provide different substances the body needs to be healthy and active.
- To understand seasonality and the advantages of eating seasonal and locally produced food.
- To know that recipes can be adapted to change the appearance, taste, texture and aroma of foods.
- To know and follow a range of safety and food hygiene procedures.

### Research (objectives to cover all year)

- To explore some existing products- does the product have any other purpose? How environmentally friendly is the product? How environmentally friendly are the resources?
- To evaluate the product on design and use and ease.
- To research and find out about famous inventors and designers.

### Design (objectives to cover all year)

- To use research into famous designers and inventors and to use market research to inform the design of their product.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design (CAD).
- To use found information (researched) to inform decisions – e.g. time, resources, costs.

### Make (objectives to cover all year)

- To apply knowledge of materials and techniques to refine and rework their product to improve its functional properties.
- To use tools to make careful measurements, so that joins, holes and openings are more accurate.
- To use technical knowledge and accurate skills to problem solve during the making process e.g. when they face a problem.
- To measure and weight ingredients using different scales.
- To cook using a heat source e.g. oven with some supervision using the basic functions.
- To use a range of cooking techniques e.g. chopping, peeling, grating, slicing, mixing, spreading, kneading and baking.

### Evaluate (objectives to cover all year)

- To carry out appropriate tests on the product to test its effectiveness.
- To evaluate against original criteria- does it have and is it fit for purpose?
- To self-evaluate discussing what does and does not work and to seek evaluation from others.

## Key vocabulary and understanding for concept connectors

Food: foods, drinks, substances, body, healthy, seasonality, seasonal, local, recipes, appearances, taste, texture, aroma, safety, hygiene, procedures.

## Sticky Knowledge

- Seasonality is when food is used at its harvest time.
- Recipes can be adapted to change the appearance, taste, texture and aroma of foods.

## Key Questions

- Do they understand and name different foods and drinks that provide different substances the body needs to be healthy and active?
- Do they understand seasonality and the advantages of eating seasonal and locally produced food?
- Do they know that recipes can be adapted to change the appearance, taste, texture and aroma of foods?
- To know and follow a range of safety and food hygiene procedures?

## Famous chef:

Gino D'acampo



# DT Year 5 Curriculum Overview

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## The Big Picture

Within structures, children will have the opportunity to research different frame structures, specifically wind turbines, from around the world. They will use their research into famous designers and inventors and market research to inform the design of their product. They will generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design (CAD). After the design stage, they will be asked to make their product, using a range of tools and techniques, for a purpose, this being a wind turbine to help save the planet. They will apply their knowledge of materials and techniques to refine and rework their product to improve its functional properties. They will use tools to make careful measurements, so that joints, holes and openings are more accurate. Once they have made their products, they will evaluate it. They will be given the opportunity to carry out appropriate tests on the product to test its effectiveness and to evaluate it against original criteria- does it have and is it fit for purpose?

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

- Exploring and naming more sophisticated methods for stiffening and strengthening structures
- Know how to and be able to create a shape net
- Know how to test a materials strength
- Know how to use CAD (computer aided design) to develop a product.

### Year 5 DT- Structures Frame Structures Spring 2

#### NC objectives – Key Stage 2

##### Pupils should be taught:

##### 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

##### 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

##### 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

##### Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products

#### Specific unit objectives

##### Structures- Frame Structures

- To know which materials are best suited to stiffen and reinforce by selecting them due to their properties.
- To know which shapes are the strongest and will support the most weight in a structure.
- To know and understand the term triangulation.
- To know how to perform simple tests to test the functionality and strength of products.

##### Research (objectives to cover all year)

- To explore some existing products- does the product have any other purpose? How environmentally friendly is the product? How environmentally friendly are the resources?
- To evaluate the product on design and use and ease.
- To research and find out about famous inventors and designers.

##### Design (objectives to cover all year)

- To use research into famous designers and inventors and to use market research to inform the design of their product.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design (CAD).
- To use found information (researched) to inform decisions – e.g. time, resources, costs.

##### Make (objectives to cover all year)

- To apply knowledge of materials and techniques to refine and rework their product to improve its functional properties.
- To use tools to make careful measurements, so that joints, holes and openings are more accurate.
- To use technical knowledge and accurate skills to problem solve during the making process e.g. when they face a problem.
- To measure and weight ingredients using different scales.
- To cook using a heat source e.g. oven with some supervision using the basic functions.
- To use a range of cooking techniques e.g. chopping, peeling, grating, slicing, mixing, spreading, kneading and baking.

##### Evaluate (objectives to cover all year)

- To carry out appropriate tests on the product to test its effectiveness.
- To evaluate against original criteria- does it have and is it fit for purpose?
- To self-evaluate discussing what does and does not work and to seek evaluation from others.

#### Key vocabulary and understanding for concept connectors

Structures: materials, reinforce, properties, shapes, weight, support, triangulation, simple tests, functionality, strength

#### Sticky Knowledge

- Triangulation is the use of triangular shapes to strengthen a structure.
- Tests can be performed on products to test their functionality and strength.

#### Key Questions

- Do they know which materials are best suited to stiffen and reinforce by selecting them due to their properties?
- Do they know which shapes are the strongest and will support the most weight in a structure?
- Do they know and understand the term triangulation?
- Do they know how to perform simple tests to test the functionality and strength of products?

#### Key designers/ architects/ inventors:

James Blyth



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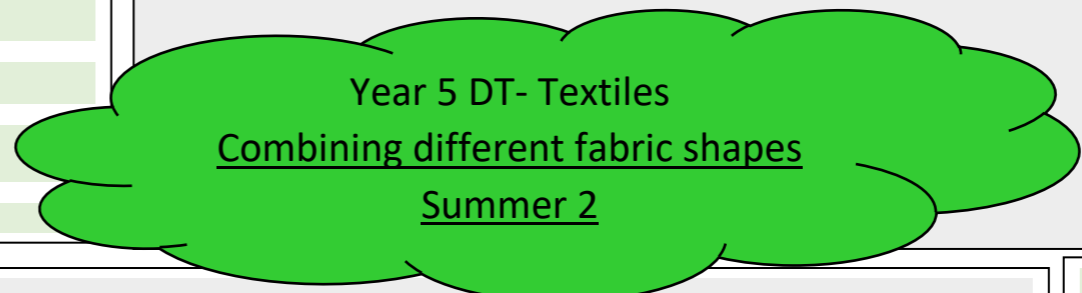
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**The Big Picture**

Within textiles, children will have the opportunity to research different costumes made by costume makers around the world, used in different plays and exhibitions. They will design their own costumes for the play, including tops and trousers, as well as dresses and accessories, in groups. They will use their research into famous designers and inventors and to market research to inform the design of their product. They will generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design (CAD). After the design stage, they will be asked to make their product, using a range of tools and techniques, for a purpose, this being costumes for their play. They will apply their knowledge of materials and techniques to refine and rework their product to improve its functional properties. They will use tools to make careful measurements, so that joins, holes and openings are more accurate. Once they have made their products, they will evaluate it. They will be given the opportunity to carry out appropriate tests on the product to tests its effectiveness and to evaluate it against original criteria- does it have and is it fit for purpose?

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

- Using smaller eyed needles and finer threads to stitch
- Practise of using more complex sewing techniques such as cross-stitch to join fabrics together
- Using stitches to develop pattern and texture to a piece
- Applying decoration to a piece using beads, buttons, feathers.



**NC objectives – Key Stage 2**  
 Pupils should be taught:

**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

**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

**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

**Technical knowledge**

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products

**Specific unit objectives**  
 Textiles- Combining different fabric shapes

- To know how to attach fastenings to their product, which are purposeful e.g. zip, Velcro, toggle, ties, clasp.
- To begin to modify threads and fabrics e.g. tie- die before they make their product.
- To use different stitches creatively to produce different patterns and textures e.g. running, whip, cross stitch.
- To understand the need for a seam allowance, when appropriate (extra fabric allowed for joining together).

**Research (objectives to cover all year)**

- To explore some existing products- does the product have any other purpose? How environmentally friendly is the product? How environmentally friendly are the resources?
- To evaluate the product on design and use and ease.
- To research and find out about famous inventors and designers.

**Design (objectives to cover all year)**

- To use research into famous designers and inventors and to use market research to inform the design of their product.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer- aided design (CAD).
- To use found information (researched) to inform decisions – e.g. time, resources, costs.

**Make (objectives to cover all year)**

- To apply knowledge of materials and techniques to refine and rework their product to improve its functional properties.
- To use tools to make careful measurements, so that joins, holes and openings are more accurate.
- To use technical knowledge and accurate skills to problem solve during the making process e.g. when they face a problem.
- To measure and weight ingredients using different scales.
- To cook using a heat source e.g. oven with some supervision using the basic functions.
- To use a range of cooking techniques e.g. chopping, peeling, grating, slicing, mixing, spreading, kneading and baking.

**Evaluate (objectives to cover all year)**

- To carry out appropriate tests on the product to tests its effectiveness.
- To evaluate against original criteria- does it have and is it fit for purpose?
- To self-evaluate discussing what does and does not work and to seek evaluation from others.

**Key vocabulary and understanding for concept connectors**

Textiles: needle, independently, fasteners, modify, stitches, pattern, textures, running stitch, whip stitch, cross- stitch, seam allowance, joining.

**Sticky Knowledge**

- A seam allowance is extra fabric allowed for joining together.
- Fastenings are used to fasten garments so that they stay closed.

**Key Questions**

- Do they know how to attach fastenings to their product?
- Can they begin to modify threads and fabrics e.g. tie- die before they make their product?
- Can they use different stitches creatively to produce different patterns and textures?
- Do they understand the need for a seam allowance, when appropriate (extra fabric allowed for joining together)?

**Key designers/ architects/ inventors:**  
 N/A