

# Year 1 DT Summer Term – Slides and Levers (Canal Lock)

## Design Brief/National Curriculum Objectives (KS1)

**To design and construct a moving picture of a canal lock using levers and sliders.**

### 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, [...].

### Make:

- Select from and use a range of tools and equipment to perform practical tasks;
- Select from and use a wide range of materials and components, including construction materials, [...] according to their characteristics.

### Evaluate:

- Explore and evaluate a range of existing products;
- Evaluate their ideas and products against design criteria.

### Technical knowledge:

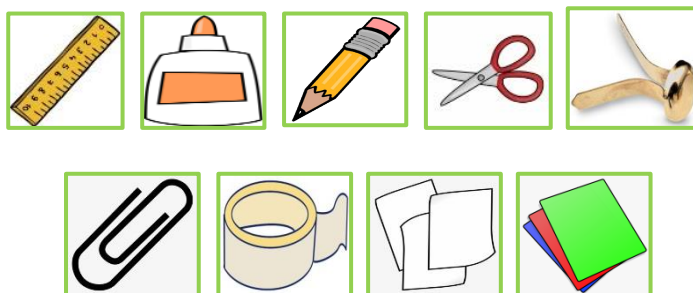
- Build structures, exploring how they can be made stronger, stiffer and more stable;
- Explore and use mechanisms in their products.

## Key Skills

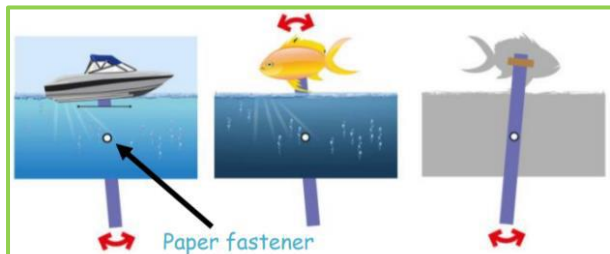
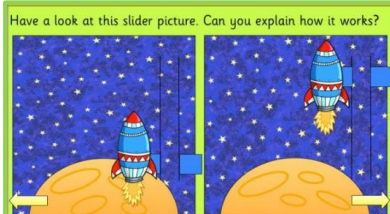
- To use their own ideas to make something;
- To explain to others how to make a product;
- To choose appropriate equipment and tools;
- To measure, mark out, cut out and shape a range of materials with help, including cutting along straight and curved lines and cutting out templates;
- To make a product with moving parts;
- To express likes and dislikes about what has been made and attempt to explain why;
- To talk about designs as they develop, identifying things that are good and things that could be changed.

## Tools/Equipment/Ingredients

**Some materials that could be used are:**



## Diagrams/Images/Symbols



## Subject Specific Vocabulary

<b>Construct</b>	To build or make something.
<b>Cut</b>	To divide into pieces with a sharp object, such as scissors or a knife.
<b>Design</b>	A sketch, model or plan of something to be made.
<b>Equipment</b>	Items needed to build with, such as empty boxes and lollipop sticks.
<b>Evaluate</b>	To assess the strengths and development points of something.
<b>Fixed</b>	To be attached to something.
<b>Guide</b>	A short strip of material used to keep a slider in place.
<b>Join</b>	A place or line where two or more things are connected or fastened together.
<b>Lever</b>	A rigid bar which moves around a pivot.
<b>Loose</b>	Where two things are attached together but not tightly.
<b>Material</b>	The different types of item used to make something.
<b>Mechanism</b>	A device that controls movement in a product or object.
<b>Pivot</b>	A point that something moves around.
<b>Slider</b>	A rigid bar that moves forwards and backwards, or up and down.
<b>Slot</b>	A hole in which a lever or slider is placed to enable movement.
<b>Template</b>	A shape or pattern used as a guide to make something.
<b>Tools</b>	An object used to carry out a particular function.

## Key Knowledge/Facts/Processes

<b>What are canals for?</b>	Canals are known as the motorways of the past. They were built to move heavy goods like coal around the country on barges before roads became popular, especially in Dudley and the Black Country. Today, people use them for sailing holidays and even to live on.
<b>Why do canals need locks?</b>	Because the land isn't always at the same height above sea level, canals sometimes needed to be built to travel uphill and downhill so that the quickest route could be taken. A lock allows the canal to cross land when it isn't level.
<b>How does a canal lock use slides and levers?</b>	To go uphill, a barge goes into an empty canal lock. Slides and levers are used to move heavy gates and let water in. This raises the barge up to the higher part of the canal so it can sail away. To go downhill, the lock is used in the opposite way.

# Year 2 DT Summer Term – Fruit and Vegetables (Africa/UK)

## Design Brief/National Curriculum Objectives (KS1)

**To plan and prepare a fruit kebab using African and UK grown fruits.**

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 [...].

Make:

- Select from and use a range of tools and equipment to perform practical tasks;
- Select from and use a wide range of materials and components, including [...] ingredients, according to their characteristics.

Evaluate:

- Explore and evaluate a range of existing products;
- Evaluate their ideas and products against design criteria.

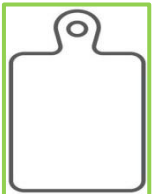
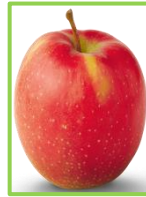
Cooking and Nutrition:

- Use the basic principles of a healthy and varied diet to prepare dishes;
- Understand where food comes from.

## Key Skills

- To create a simple, annotated drawing of a product before production;
- To describe and explain the ingredients being used and the reasons for their choice, both verbally and in writing;
- To understand the need for a balanced diet;
- To use a range of cutting and slicing skills safely;
- To use and understand basic food handling and hygienic practices.

## Tools/Equipment/Ingredients



## Diagrams/Images/Symbols



Cutting



Slicing



Peeling



Grating



Squeezing

**Hygiene – some key pointers**

- Jewellery is removed
- Hair is tied back
- Sleeves are rolled up
- Aprons are on
- Hands are washed
- Cuts are covered with blue waterproof dressing



## Subject Specific Vocabulary

<b>Fruit</b>	The edible seed of a plant or tree.
<b>Kebab</b>	Fresh or cooked ingredients on a skewer.
<b>Nutrients</b>	Things in food that the body needs to stay healthy.
<b>Peel</b>	To remove the skin from fruit and vegetables.
<b>Pith</b>	The soft white lining inside some fruits, such as an orange.
<b>Salad</b>	A cold dish of fresh fruit or vegetables.
<b>Slice</b>	To cut something with a knife.
<b>Vegetables</b>	Plants that are used as food.

## Key Knowledge/Facts/Processes

<b>What is the difference between a fruit and a vegetable?</b>	Both fruits and vegetables come from plants, but which part of the plant they come from tells us what they are. Fruits grow from the flower of a plant and contain seeds, whilst vegetables are any other part of the plant that can be eaten, like the roots, stem and leaves.
<b>Why are fruit and vegetables important?</b>	Fruit and vegetables are an important part of a healthy, balanced diet. People should try to eat at least 5 portions of a variety of fruit and vegetables every day, as well as foods that contain different vitamins, minerals and nutrients that the body needs to stay healthy.
<b>Why do some fruits and vegetables only grow in certain parts of the world?</b>	Different types of fruits and vegetables need different environments for them to grow. For example, pineapples are grown in Africa because the weather is quite hot and dry, whilst apples grow in the UK because they grow best in cold winter temperatures.

**NB: The UK grown fruits provided above are suggestions only: other seasonal produce may be more suitable and/or widely available at the time of teaching.**

# Year 3 DT Summer Term – Strengthening Structures (Priory Ruins)

## Design Brief/National Curriculum Objectives (KS2)

### To create a free-standing model of part of the ruins of St. James' Priory, Dudley.

#### Design:

- Use research and develop design criteria to inform the design of [...] functional, appealing products that are fit for purpose [...];
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes [...].

#### Make:

- 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 and components, including construction materials, [...] according to their functional properties and aesthetic qualities.

#### Evaluate:

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

#### Technical knowledge:

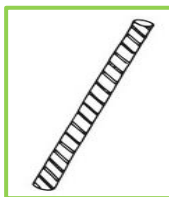
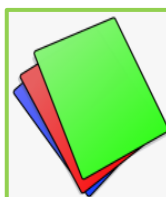
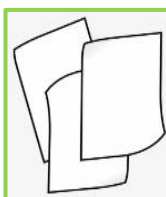
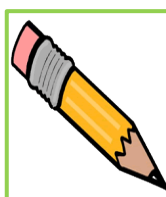
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

## Key Skills

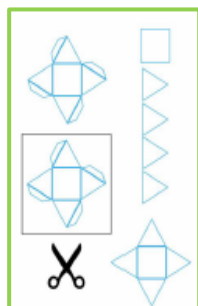
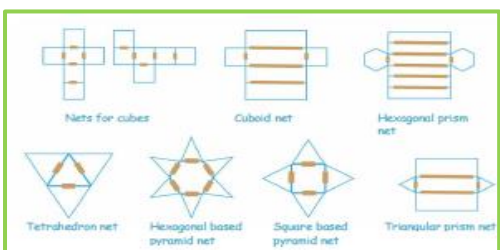
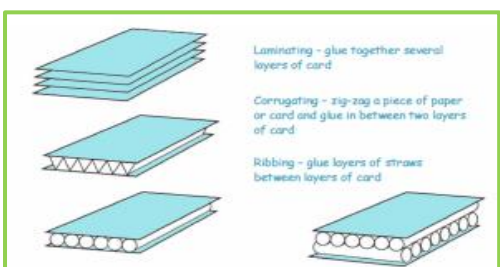
- To use and apply an understanding of how to strengthen, stiffen and reinforce more complex structures through a range of techniques;
- To choose materials based on their strength and suitability;
- To measure and mark materials accurately, according to the most appropriate unit of measurement (mm/cm);
- To create a prototype design to help develop initial ideas further;
- To create a final product based on initial designs and prototypes;
- To work collaboratively to effectively evaluate and critique throughout the design process, identifying strengths and weaknesses as appropriate.

## Tools/Equipment/Ingredients

### Some materials that could be used are:



## Diagrams/Images/Symbols



## Subject Specific Vocabulary

<b>Corrugating</b>	Using ridges and grooves between materials.
<b>Cuboid</b>	A solid body with rectangular sides.
<b>Edge</b>	Where two surfaces meet at an angle.
<b>Face</b>	The surface of a geometric shape.
<b>Laminating</b>	Layering several pieces together.
<b>Net</b>	A flat or opened out shape of an object.
<b>Ribbing</b>	Creating a rib-like structure to form ridges.
<b>Scoring</b>	A cutting line or mark to make cutting or folding easier.
<b>Shell structure</b>	Hollow structure with a thin outer covering.
<b>Vertex</b>	Corners of a solid shape where edges meet.

## Key Knowledge/Facts/Processes

<b>What was St. James' Priory?</b>	St. James' Priory was founded in 1160 to be used by a community of monks. It was closed by Henry VIII in the 16 <sup>th</sup> century and slowly fell into disrepair. Most of the materials that the priory was made from were scavenged to be used in other buildings around Dudley.
<b>Why are the Priory ruins so important in the local area?</b>	Priory Park was opened in the 1930s to serve the newly built Priory Estate, with the ruins of St. James' at its centre. Over time they were neglected, but in the 21 <sup>st</sup> century a lot of work has been done to restore them and help people understand the history of the area.
<b>How can a sheet material structure be strengthened?</b>	Sheet materials, such as paper and card, can be quite flimsy and unstable to build models from without being stiffened or strengthened. Using techniques such as layering and corrugating makes the structure thicker and stable enough to support itself.



# Year 4 DT Summer Term – Bread Making

## Design Brief/National Curriculum Objectives (KS2)

**To research, design and produce a bread based product to complement rationing on the Home Front during World War II.**

### Design:

- Use research and develop design criteria to inform the design of [...] appealing products that are fit for purpose, aimed at particular individuals or groups;
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes [...].

### Make:

- 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 and components, including [...] 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.

### 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.

## Key Skills

- Compare and contrast a range of existing types of bread through relevant investigation and analysis, including nutritional value and cooking instructions;
- To follow a baking recipe accurately;
- To demonstrate a range of baking and cooking techniques;
- To create and refine recipes through variables such as ingredients, cooking times and baking techniques;
- To measure and weigh ingredients accurately;
- To calculate ratios of ingredients in order to scale up where appropriate.

## Tools/Equipment/Ingredients

**Dependent on the recipe, the possible ingredients and/or equipment could include:**



The link below references 24 child-friendly bread recipes:

<https://www.bbcgoodfood.com/recipes/collection/kids-bread-recipes>

## Diagrams/Images/Symbols



## Subject Specific Vocabulary

<b>Bran</b>	The hard, protective shell of grain.
<b>Dough</b>	A mixture of uncooked flour, yeast and water.
<b>Finishing</b>	What is done to the appearance of a final product (e.g.: decoration, shape).
<b>Gluten</b>	A mixture of two proteins in grains that give dough an elastic texture.
<b>Grain</b>	A type of cereal crop used to make food, such as wheat.
<b>Kneading</b>	The pulling and squeezing of dough to make it smooth.
<b>Proving</b>	A baking technique used to activate yeast in dough and help it to rise.
<b>Rubbing in</b>	Rubbing dry ingredients, such as breadcrumbs, into fat.
<b>Unleavened</b>	Flat bread where yeast has not been added.
<b>Yeast</b>	A tiny plant which makes bubbles of carbon dioxide.

## Key Knowledge/Facts/Processes

<b>What rationing?</b>	During World War II, several foods were in short supply or needed to feed soldiers fighting abroad. Rationing was recorded in ration books and meant every household had the same, limited amount of different foods per week. Bread, however, was not rationed!
<b>How is bread made?</b>	Dough that is used to make bread is kneaded to prepare it for baking: this breaks down the gluten and traps air inside it to help the dough to rise. Often, yeast is also used to help the bread rise and prove by converting the sugar and flour in the dough into carbon dioxide.
<b>Are the same baking techniques used in other recipes?</b>	The dough that is used in bread making can also be used to make a variety of other foodstuffs. Biscuits, cookies and pizzas are some of the items that can be made by using the same baking techniques, such as kneading and proving.

# Year 5 DT Summer Term – Fixing Structures (Greek Vases)

## Design Brief/National Curriculum Objectives (KS2)

**To design and create a clay vase in the style of the Ancient Greeks.**

### Design:

- Use research and develop design criteria to inform the design of [...] functional, appealing products that are fit for purpose [...];
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes [...].

### Make:

- Select from a wider range of tools and equipment to perform practical tasks accurately;
- Select from and use a wider range of materials and components, including construction materials, [...] according to their functional properties and aesthetic qualities.

### Evaluate:

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

## Key Skills

- To design an appealing product with a clear purpose based on comprehensive research;
- To create and follow a step-by-step plan, choosing the most appropriate equipment, techniques and materials for each step;
- To measure and mark materials accurately, according to the most appropriate unit of measurement (mm/cm);
- To create a series of prototypes in different media in order to help develop initial ideas further;
- To create a final product based on initial designs and prototypes;
- To work collaboratively to effectively evaluate and critique throughout the design process, identifying strengths and weaknesses as appropriate.

## Tools/Equipment/Ingredients

To make prototype designs from other materials (scratch art/terracotta pot painting) during research and/or the design process:

<https://digventures.com/2016/05/how-to-make-a-scratch-art-greek-vase/>

<https://www.activityvillage.co.uk/make-a-greek-vase>

To make the final product using coiling and/or as a pinch pot, the following links offer visual and/or video support:

<https://www.st-pauls.enfield.sch.uk/making-greek-pots/>

<https://www.youtube.com/watch?v=u1qx5kohof0>

**NB: The tools/equipment may need to be adapted depending on the materials available (e.g.: self-drying clay).**

## Diagrams/Images/Symbols



Scoring



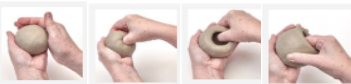
Sealing



Slip



Pinch Pots



Smearing/blending inside and outside of seam



## Key Knowledge/Facts/Processes

<b>Who were the Ancient Greeks?</b>	The Ancient Greeks were a civilisation that lived thousands of years ago in modern day Greece and western Turkey. Their legacy on the world today has been huge, impacting upon many different parts of society such as law, communication and entertainment.
<b>What Ancient Greek vases were used for?</b>	Although Ancient Greek vases looked very appealing, they were meant mainly to be functional. There were many different types and styles of vase, but all had a purpose, such as storage, carrying, drinking and even to hold perfume and other cosmetic products.
<b>Why were Ancient Greek vases made from clay?</b>	Ancient Greek vases were made from terracotta, which is clay that has been hardened through being fired (or baked) in a kiln. Clay was readily available from the ground and the impurities in it, such as iron, helped to give it its distinctive orange colour.

## Subject Specific Vocabulary

<b>Coiling</b>	A method of forming pottery by building up the walls using rope-like coils of clay.
<b>Mock-up</b>	A model that tests design criteria using cheaper materials.
<b>Scoring</b>	The etching/marking of a material to help the joining together of separate pieces.
<b>Seam</b>	A join between two pieces of material.
<b>Sealing</b>	Adding pieces of clay between seams to help them to join.
<b>Slip</b>	A mix of water and clay used to join together separate pieces.
<b>Smearing</b>	A technique of pulling across clay to help seal joins.
<b>Template</b>	A shape or pattern used as a guide to make something.

# Year 6 DT Summer Term – Celebrating Cultures (Food in Dudley)

## Design Brief/National Curriculum Objectives (KS2)

**To research, design and create a spicy dish that reflects some of the food cultures in Dudley and its surrounding areas.**

### 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 [...].

### Make:

- 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 and components, including [...] 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.

### 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.

## Key Skills

- Compare and contrast a range of local dishes through relevant investigation and analysis, including nutritional value and cooking instructions;
- To follow a recipe accurately, demonstrating a range of cooking techniques;
- To create and refine recipes through variables such as ingredients, cooking times and cooking techniques;
- To measure and weigh ingredients to the nearest and most appropriate unit of measurement (ml/g);
- To calculate ratios of ingredients in order to scale up where appropriate;
- To undertake safe and hygienic working practise at all times.

## Tools/Equipment/Ingredients

The links below provide information and/or recipes related to the cultural heritage of the local area that are also part of the sensory evaluation process:

<http://www.historywebsite.co.uk/Museum/Food/Recipes/Cashmore.htm> [Grey peas/Faggots and peas]  
<https://www.bbcgoodfood.com/recipes/collection/kids-curry-recipes> [Child-friendly curries]  
<https://www.tasteatlas.com/most-popular-dishes-in-west-midlands> [General information]

**NB:** The appropriate kitchen utensils will be dependent upon the recipe used.

## Diagrams/Images/Symbols



## Key Knowledge/Facts/Processes

<b>What types of dish are traditional for Dudley and the local area?</b>	Because of its working class heritage, Dudley and Black Country people ate foods that were available cheaply and could be cooked simply for their main meals. Grey peas are soaked overnight and then boiled, whilst faggots make use of leftover scraps of meat (offal).
<b>How have local tastes changed over time?</b>	Immigration from overseas during the 20 <sup>th</sup> century meant that people from different cultures began to live together in Dudley and the local area. Over time, recipes for dishes like curries established themselves as part of the area's culinary traditions.
<b>What gives our popular local dishes their distinct flavours?</b>	Different dishes use a range of flavourings for their unique tastes and aromas, such as spices and herbs. Because of the global mix of cultures that make up our local area, the variety of ingredients is large and can originally be found all over the world.

## Subject Specific Vocabulary

<b>Curried</b>	To flavour food using spices.
<b>Dice</b>	To cut food into small cubes.
<b>Julienne</b>	To cut food into long, thin strips.
<b>Marinate</b>	To sit ingredients in a flavoursome liquid before cooking.
<b>Nutrients</b>	Things in food that the body needs to remain healthy.
<b>Processed</b>	Ingredients that have been changed in some way.
<b>Season</b>	To prepare meat or fish with spices.
<b>Sensory evaluation</b>	To evaluate food by its taste, smell, texture and appearance.
<b>Slice</b>	To cut something with a knife.
<b>Spices</b>	Substances made from vegetables with strong smells and flavours.
<b>Vegetables</b>	Part of a plant that can be eaten.