



Design and Technology Curriculum: Year 2

What are the aims and intentions of this curriculum?

That by the end of KS 1, children will:

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
- 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.

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.

| Term | Topic | Knowledge <i>*Technical Knowledge</i> | Skills <i>*Design *Make *Evaluate</i> | Vocabulary |
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| 1 | Mechanisms: Fairground wheel | <p>To know that different materials have different properties and are therefore suitable for different uses</p> <p>To know the features of a Ferris wheel include the wheel, frame, pods, a base an axle and an axle holder</p> <p>To know that it is important to test my design as I go along so that I can solve any problems that may occur</p> | <p>Selecting a suitable linkage system to produce the desired motions</p> <p>Designing a wheel selecting appropriate materials based on their properties</p> <p>Selecting materials according to their characteristics</p> <p>Following a design brief</p> <p>Evaluating different designs</p> <p>Testing and adapting a design</p> | <p>Axle, Decorate, Evaluation, Ferris wheel, Mechanism, Stable, Strong, Test, Waterproof, Weak</p> |
| 2 | Food: A balanced diet | <p>To know that 'diet' means the food and drink that a person or animal usually eats</p> <p>To understand what makes a balanced diet</p> <p>To know where to find the nutritional information on packaging</p> <p>To know that the five main food groups are: carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar</p> <p>To understand that I should eat a range of different foods from each food group, and roughly how much of each food group</p> <p>To know that nutrients are substances in food that all living things need to make energy, grow and develop</p> <p>To know that 'ingredients' means the items in a mixture or recipe</p> <p>To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy</p> <p>To know that many foods and drinks we do not expect to contain sugar do; we call these 'hidden sugars'</p> | <p>Designing a healthy wrap based on a food combination which work well together</p> <p>Slicing food safely using the bridge or claw grip</p> <p>Constructing a wrap that meets a design brief</p> <p>Describing the taste, texture and smell of fruit and vegetables</p> <p>Taste testing food combinations and final products</p> <p>Describing the information that should be included on a label</p> <p>Evaluating which grip was most effective</p> | <p>Alternative, Diet, Balanced diet, Evaluation, Expensive, Healthy, Ingredients, Nutrients, Packaging, Label, Refrigerator, Sugar, Substitute, Bridge grip, Claw grip</p> |
| 3 | Structures: Baby bear's chair | <p>Generating and communicating ideas using sketching and modelling</p> | <p>To know that shapes and structures with wide, flat bases or legs are the most stable</p> | <p>Function, Man-made, Mould, Natural, Stable, Stiff,</p> |



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| | | <p>Learning about different types of structures, found in the natural world and in everyday objects</p> <p>Making a structure according to design criteria</p> <p>Creating joints and structures from paper/card and tape</p> <p>Building a strong and stiff structure by folding paper</p> <p>Exploring the features of structures</p> <p>Comparing the stability of different shapes</p> <p>Testing the strength of own structures</p> <p>Identifying the weakest part of a structure</p> <p>Evaluating the strength, stiffness and stability of own structure</p> | <p>To understand that the shape of a structure affects its strength</p> <p>To know that materials can be manipulated to improve strength and stiffness</p> <p>To know that a structure is something which has been formed or made from parts</p> <p>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move</p> <p>To know that a 'strong' structure is one which does not break easily</p> <p>To know that a 'stiff' structure or material is one which does not bend easily</p> <p>To know that natural structures are those found in nature</p> <p>To know that man-made structures are those made by people</p> | <p>Strong, Structure, Test, Weak, Evaluation</p> |
| 4 | Textiles: Pouches | <p>To know that sewing is a method of joining fabric</p> <p>To know that different stitches can be used when sewing</p> <p>To understand the importance of tying a knot after sewing the final stitch</p> <p>To know that a thimble can be used to protect my fingers when sewing</p> | <p>Designing a pouch</p> <p>Selecting and cutting fabrics for sewing</p> <p>Decorating a pouch using fabric glue or running stitch</p> <p>Threading a needle</p> <p>Sewing running stitch, with evenly spaced, neat, even stitches to join fabric</p> <p>Neatly pinning and cutting fabric using a template</p> <p>Troubleshooting scenarios posed by teacher</p> <p>Evaluating the quality of the stitching on others' work</p> <p>Discussing as a class, the success of their stitching against the success criteria</p> <p>Identifying aspects of their peers' work that they particularly like and why</p> | <p>Accurate, Fabric, Knot, Pouch, Running-stitch, Sew, Shape, Stencil, Template, Thimble</p> |
| 5 | Mechanisms: Moving Monsters | <p>Creating a class, design criteria for a moving monster</p> <p>Designing a moving monster for a specific audience in accordance with a design criteria</p> <p>Making linkages using card for levers and split pins for pivots</p> | <p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement</p> <p>To know that there is always an input and output in a mechanism</p> | <p>Design criteria, Evaluation, Input, Lever, Linear motion, Linkage,</p> |



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| | | <p>Experimenting with linkages adjusting the widths, lengths and thicknesses of card used Cutting and assembling components neatly Evaluating own designs against design criteria Using peer feedback to modify a final design</p> | <p>To know that an input is the energy that is used to start something working To know that an output is the movement that happens as a result of the input To know that a lever is something that turns on a pivot To know that a linkage mechanism is made up of a series of levers To know some real-life objects that contain mechanisms</p> | <p>Mechanical, Mechanism, Motion, Oscillating motion, Output, Pivot, Reciprocating motion, Rotary motion, Survey</p> |
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