Brookside Academy Skills, Knowledge and Vocabulary document

Design and Technology Year 3

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

<table>
<tr><th colspan="4">KS1</th></tr>
<tr><td colspan="4">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:</td></tr>
<tr><th>Design</th><th>Make</th><th>Evaluate</th><th>Technical knowledge</th></tr>
<tr><td>• 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</td><td>• 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</td><td>• explore and evaluate a range of existing products
• evaluate their ideas and products against design criteria</td><td>• 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.</td></tr>
<tr><th colspan="4">KS2</th></tr>
<tr><td colspan="4">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, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</td></tr>
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Design	Make	Evaluate	Technical knowledge
• 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	• 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	• 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	• 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			
KS1			
• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.			
KS2			
• 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 and Technology Intention Statement

Children at Brookside Academy often take part in the design, make and evaluate cycle; allowing them to gain practical, technical and logical skills. In a whole school approach, our design and technology curriculum includes a variety of multi-sensory experiences and a progression of skills that can be used throughout their time here. Through subtle guidance from our staff, children are given freedom and autonomy to explore, research and develop their own ideas and creativity putting the Brookside pupil at the forefront of their learning. Additionally, children are encouraged to take part in group projects enhancing their communication and social skills. These skills, that are taught through our engaging and inspiring curriculum, are transferable meaning children can participate successfully in our ever changing world.

Whilst at Brookside Academy, children are always encouraged to be creative. Design and technology is an opportunity for children to apply their creativity and imagination to a range of child-led tasks freely. Communication is another skill that children will use in this subject area, where they are expected to work collaboratively in a group, discuss ideas with their peers and be introduced to new technical vocabulary. Children are also encouraged to reflect on their work and learn from what went well and what did not, persevering when things prove difficult. Learners are expected to value and respect the designs and work of others. They are taught the skills of giving precise feedback and constructive criticism empathetically.

Year 3		
	Skills and Knowledge	**Vocabulary**
Design	• Begin to describe the purpose of products showing how the design meets a range of requirements • Have at least one idea about how to create a product and make design decisions • Begin to evaluate existing products, considering how well they have been made, materials, whether they work, how they have been made, are they fit for purpose. Use ideas gained to influence own design. • Create a plan which shows order, equipment and tools with an accurately labelled sketch and words • Begin to use computers to show design	Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief Product Consumer Customer Target audience Purpose Application Constraints Client
Make	• Select suitable tools/equipment/ appropriate materials and explain choices • Work through plan in order following safety and hygiene procedures • Begin to measure, mark out, cut and shape materials/components with some accuracy • Begin to assemble, join and combine materials and components with some accuracy • Begin to apply a range of finishing techniques with some accuracy	Materials Mould Liquid Solid Form Shape Adhesive Hand-made Packaging Presentation Machine made Dimensions Durable

Evaluate	• Use design criteria to evaluate finished product • Identify the strengths in their product and say what I would change to make design better, considering whether the product was fit for purpose. • Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products (Romans and Greeks) • Begin to understand by whom, when and where products were designed and made	Assess Edit Improve Alter Outcome Develop Test Analyse Effective Fit for purpose Design criteria Alternatives Models Quality Function Functionality
Technical Knowledge	• To use the correct technical vocabulary for the products they are undertaking • Understand the materials have both functional and aesthetic properties • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Begin to alter product after checking, to make it better • Begin to choose textiles considering appearance and functionality • Begin to understand that a simple fabric shape can be used to make a 3D textiles project • Begin to understand that food ingredients can be fresh, precooked or processed	
Cooking	• Prepare and cook some dishes safely and hygienically • Make product look attractive • Think about how to grow plants to use in cooking • Begin to understand food comes from UK and wider world and can be reared, grown or caught. • Describe how healthy diet= variety/balance of food/drinks • Explain how food and drink are needed for active/healthy bodies. • Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	Healthy Unhealthy Balanced Vitamins Disease Nutrition Healthy eating Hygiene Diet Cross contamination Grams Storage Presentation

		Taste Texture Flavour Disinfect Bacteria