Freegrounds Infant School
'Building the future together'

Intent

At Freegrounds Infant School we provide opportunities for our children to be creative and innovative problem solvers. Design and Technology (DT) is an inspiring and practical subject with natural links to maths, science, computing and art. Children are presented with practical (and imaginary) design briefs linked to topics and are taught how to think critically, find solutions and create products to fit a given set of design criteria. Children will research existing products and solutions and use these to develop their own ideas, and be taught the practical and theoretical skills needed to build, make and create. Self-evaluation and the evaluation of others is a key requirement of success.

Implementation

The National Curriculum and Early Years Foundation Stage is the starting point for the teaching of all subjects in our school. Statutory requirements are carefully mapped across a two-year cycle, ensuring that skills and knowledge are taught in an order that maximises learning and allows sensible cross-curricular links to take place.

At our infant school, Design and Technology is taught through three carefully planned units each year, where appropriate, DT learning is linked to wider curriculum themes, enabling children to make meaningful connections and understand how design impacts the world around them. Vocabulary is explicitly taught and revisited to support children's understanding and ability to talk confidently about their learning.

Each unit follows the design process of investigating, designing, making and evaluating, giving children opportunities to become creative problem solvers while developing practical skills. Pupils investigate existing products, learn about the needs of users, generate and communicate their ideas through drawings and discussion, and select appropriate tools and materials to create purposeful outcomes.

Across the school, children experience the key areas of Design and Technology, including:

- Structures
- Mechanisms
- Textiles
- Food and nutrition

Practical, hands-on learning is at the heart of our DT curriculum. Children are taught to use tools and equipment safely and accurately, developing increasing confidence, resilience and independence as they refine their work. Opportunities for discussion, collaboration and evaluation encourage pupils to reflect on their designs, identify improvements and celebrate success.

Assessment is ongoing throughout each unit. Teachers use questioning, observations and activities to assess children's understanding, inform future teaching and ensure progression. Through our DT curriculum, children develop the practical skills, creativity and problem-solving abilities needed to become innovative designers and makers.

Impact

The impact of our Design and Technology curriculum is that children leave our infant school as confident, creative and resilient problem-solvers who can apply their knowledge and skills to design and make products for a purpose. Through engaging, hands-on learning experiences, pupils develop a strong understanding of the design process and are able to talk about their ideas, choices and outcomes using appropriate technical vocabulary.

Children demonstrate progression in their ability to:

- Design purposeful products that meet a given need or user.
- Select and use appropriate tools, materials and techniques safely and effectively.
- Build practical skills in structures, mechanisms, textiles and food technology.
- Evaluate their own work and the work of others, identifying strengths and possible improvements.
- Show resilience when faced with challenges, adapting and refining their ideas throughout the making process.

As pupils move through the school, they become increasingly independent in planning, creating and evaluating products. They develop confidence in taking risks, testing ideas and solving problems, recognising that mistakes are a valuable part of the design process.

The DT curriculum also supports wider learning by developing children's creativity, communication, teamwork and fine motor skills. Through practical experiences, pupils gain a greater understanding of how design and technology influences everyday life and the world around them.

By the end of Key Stage 1, our children are enthusiastic learners who enjoy designing and making, can reflect on their learning, and are well prepared for the next stage of their Design and Technology education.

Freegrounds Infant School: Design Technology Curriculum Map

A	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Yr 1 & 2	**How do I get home?**	**Building the best**	**The Sea**	**The Sea**	**Save the planet**	**Brilliant Brazil**
	Wheels and axles Fairytale carousel.	**Structures** 3 Pigs Houses		*Opportunities to build junk model boast for sinking*	*Links to art and 3D form: junk model sculpture and paper strengthening techniques.*	**Food** Dips and Dippers

B	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Yr 1 & 2	**Let it shine!**	**Winter**	**What big eyes you've got!**	**Let it Grow!**	**Kings and Queens**	**I spy**
		Textiles Joining and fixing Christmas decorations	***Levers and sliders*** Fairytale themed Moving Pictures	***Structures/Mechanisms*** Windmills for keeping crops safe from birds. Make kites		

Bold headings = DT is a focus this term. Where DT is not a focus, optional learning / activities are suggested, these are not designed to be full units. They could also be set as home learning tasks.

NB: See EYFS Curriculum map to see how learning in EYFS feeds into the whole school curriculum map for DT

Freegrounds Infant School: Design Technology Progression of Skills & Knowledge (assessment points = bold)

Key Stage 1	
Disciplinary	Substantive
Design	
• Investigate and explore existing products to understand how they work and who they are for. • Ask questions about products and identify their purpose. • Generate ideas based on design criteria. • Communicate ideas through talking, drawing, labelling and simple models. • Plan what they will make and identify the materials they might need. • Describe what it is they want to create. • Explain how their design meets the needs of the user	• Know that products are made for a purpose. • Know that products are designed for people to use. • Know that drawings and labels can be used to share ideas. • Know that materials are chosen for different reasons. • Know that products are designed to meet specific needs. • Know that design criteria describe what a product should do. • Know that designers learn from existing products. • Know that materials and design choices affect how well a product works. • Know that successful products meet the needs of the intended user
Make	
<u>Textiles</u> • Can cut & shape fabric using scissors • Can join fabrics by using running stitch, glue, staples, and tape • Cutting different sorts of fabrics • Cut, trim and glue material and apply decoration • Apply decoration using beads, buttons, feathers etc • Cut out shapes which have been created by drawing round a template onto the fabric	• Know that different materials have different properties. • Know that some materials are stronger, more flexible, waterproof or absorbent than others. • Know that materials are chosen because of their suitability for a particular purpose. • Know that changing a material can affect how well a product works.
<u>Structures</u> • Can select from, & use, a wide range of construction materials according to their characteristics • Can join appropriately for different materials & situations e.g. glue, tape • Explore & use mechanisms (e.g. wheels & axels) in their products • Investigate joinings: temporary, fixed and moving • Build structures, making them stronger, stiffer & more stable	• Know that a structure is something that has been built for a purpose. • Know that structures need to be strong so they do not break easily. • Know that structures need to be stiff so they do not bend when they are not meant to. • Know that structures need to be stable so they do not fall over. • Know that the shape and materials used can affect the strength of a structure.

• Make their own decisions on how to join particular materials & what sort of method to use • Learn to cut materials independently <u>Mechanisms</u> • Explore and investigate a range of wheeled products. • Identify features that help products move. • Observe how wheels and axles work within different products. • Compare existing products and discuss their effectiveness. Identify where levers and sliders are used in everyday products.	• Know that a wheel and axle work together to allow movement. • Know that wheels help objects move more easily. • Know that a slider is a mechanism that moves backwards and forwards in a straight line. • Know that a lever is a mechanism that pivots to make something move. • Know that mechanisms are used to create movement in products. .
Evaluate	
• Explore and compare a range of existing products. • Say what they like an do not like about items they have made. • Identify strengths and weaknesses in their own designs. • Explain what has worked well and what could be improved. • Evaluate products against simple design criteria. • Suggest changes that would improve the product	• Know that products are made for a purpose. • Know that people can like and dislike different features of a product. • Know that talking about a product helps us decide what is good about it. • Know that products can be judged against design criteria. • Know that products have strengths and weaknesses. • Know that designers use evaluation to improve their products and designs.
Technical knowledge	
• Build structures and investigate ways to make them stronger, stiffer and more stable. • Explore and use simple mechanisms such as wheels, axles, levers and sliders. • Investigate how materials behave and choose materials for specific purposes. • Use technical vocabulary when discussing products and processes. • Solve practical problems that arise during designing and making. • Apply learning from previous projects to new design challenges	• Know the meaning of key DT vocabulary, including structure, mechanism, wheel, axle, lever, slider, stable, strong, stiff, design and evaluate. • Know that designers and engineers use technical language to describe products and processes.
Cooking and Nutrition	

• Understand where some foods come from (plant or animal sources). • Recognise that a healthy diet includes a variety of foods from different food groups. • Explain how food is prepared safely and hygienically. • Understand that ingredients can be combined in different ways to create food products. • Follow simple recipes and instructions with increasing independence. • Select and use basic tools safely (e.g. knives, peelers, graters, cutters) with adult supervision. • Measure, cut, mix, spread and assemble ingredients accurately. • Apply simple food preparation techniques to make a finished product	• Know what ingredients are • Know features of a healthy snack • Know hygiene rules for food preparation • Understands that foods have different tastes and textures • Understand and use basic food preparation vocabulary • Know that products are designed for a purpose • Know that food comes from plants or animals. • Know the names of common fruits and vegetables. • Know basic food hygiene rules. • Know that food can be prepared in different ways. • Know the main food groups and why we need them. • Know what makes a balanced and healthy meal or snack. • Know where a wider range of foods originate. • Know that food choices can contribute to a healthy lifestyle.

National Curriculum in England: Design Technology

Purpose of Study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

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.

Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1 Subject Content

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.

Cooking & Nutrition

• use the basic principles of a healthy and varied diet