Curriculum:

Progression in Design & Technology

INTENT - The Design & Technology Curriculum

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At Hunton & Arrathorne, we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

Children take part in 2 'DT Days' per term with the entire day devoted to the subject; in the summer term this always has a 'Food & Nutrition' focus.

	Class 1		Class 2	Class 3		Class 4	
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
DESIGN	Talk about my ideas, describing key design elements.	Create a simple design for my product. Use pictures and words to describe what I want to do.	Design useful, pleasing products for myself and other users based on a design brief. Generate, develop, model and communicate my ideas through talking, drawing, templates, mock ups and ICT.	Use my knowledge of existing products to design my own functional product. Use my knowledge of existing products to design functional and appealing products for a particular purpose or audience. Create designs using annotated sketches, cross sectional diagrams and simple computer programmes. Create designs using exploded diagrams.		Use my research into existing products and market research to inform the design of my own innovative product. Use research I have done into different designers and inventors to inform my designs. Create prototypes to show my own ideas. Generate, develop, model and communicate my ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, patterned pieces and CAD.	
MAKE	Use a range of small tools with increasing control and accuracy. Explore ways to cut, join and combine materials and components safely.	Select from and use a range of tools and equipment to perform practical tasks. Use a range of simple tools to cut, join and combine materials and components safely. (such as paper clips, tape, different glues)	choose tools to use and select materials based on my knowledge of their properties Safely measure, mark out, cut and shape materials using a range of tools.	safely measure, mark out, cut, assemble and join with some accuracy use techniques which require more accuracy to cut, shape, join, and finish my work make suitable choices from a wide range of tools & unfamiliar materials & plan out the main stages of use use my knowledge of techniques and the functional and aesthetic qualities of wide range of materials to plan how to use them		make careful and precise measurements so that joins, holes and openings are in exactly the right place apply their knowledge of materials and techniques to refine and rework their product to improve its functional properties and aesthetic qualities produce step by step plans to guide their making, demonstrating that they can apply their knowledge of different materials, tools and techniques use their technical knowledge and accurate skills to problem solve during the making process	
EVALUATE	Talk about existing products and their own creations.	Make simple judgements about existing products and those that I have made. Suggest how a product could be improved.	Evaluate and assess existing products and those that I have made using a design criterion.	Investigate and analyse existing products and those I have made, considering a wide range of factors including who, where and when products were designed. Consider how existing products and my own existing products might be improved and how they meet the needs of the intended user.		Make detailed evaluations, including eco credentials, about existing products and my own considering the views of others to improve my work. Use my knowledge of famous designs to further explain the effectiveness of existing products and products that I have made.	
TECHNICAL KNOWLEDGE	Begin to build structures from a range of materials. Recognise that wheels need to turn. **Explore the properties of different fabrics using all their senses.**	build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms such as flaps and hinges and wheels & axels in kit form **Explore, cut, join and make using different fabrics**	investigate different techniques for stiffening materials & stabilising structures explore and use mechanisms such as levers, sliders, wheels and axels in products **Understand how simple 3-D textile products are made, using a template to create two identical shapes.**	Know how to make strong, stiff shell structures apply techniques I have learnt to strengthen structures and explore my own ideas understand how mechanical systems such as levers and linkages create movement understand and use electrical systems in my products Know that a single fabric shape can be used to make a 3D textiles product		build more complex 3D structures and apply my knowledge of strengthen techniques to make them stronger or more stable use a wide range of methods to strengthen, stiffen and reinforce complex structures and use them accurately and appropriately apply my understanding of computing to program, monitor and control my products understand how to use more complex mechanical and electrical systems understand how pulleys and gears create movement Know that a 3D textiles product can be made from a combination of fabric shapes	

FOOD TECHNOLOGY & NUTRITION	Make links between health and food choices Know that food can be grown Use cutlery to prepare and eat food	Talk about what I eat at home and begin to discuss what healthy foods are Know the importance of '5 a day' portions of fruit and veg Say where food comes from and give examples of food that is grown. Use simple tools to help prepare food safely	Understand the need for a variety of food in a diet. Name and sort foods into the five groups of the 'eat well' plate. Understand that all food has to be farmed, grown or caught. Use a wider range of cookery techniques to prepare food safely.	understand that food has to be farmed, grown or caught in Europe and the wider world talk about the different food groups and name food from each group understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active understand seasonality and the advantages of eating seasonal and locally produced food use a wider variety of ingredients and techniques to prepare and combine ingredients safely read and follow recipes which involve several processes, skills and techniques	understand the main food groups and the different nutrients that are important for heath understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable select appropriate ingredients and use a wide range of techniques to combine them use information on food labels to inform choice confidently plan a series of healthy meals based on the principles of a varied and healthy diet research, plan & prepare & cook a savoury dish, applying my knowledge of ingredients & my technical skills

IMPLEMENTATION –

	YEAR A			YEAR B		
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
Aspect	Structures	KS1 – Mechanisms KS2 – Electrical	Food	Mechanisms	Textiles	Food
Class 1 **FS2 & Y1**	Walls & Towers	Wheel Kits	Fruit Salad	Flaps and Hinges	Exploring Fabric	Veg Sticks
Class 2 **Y2**	Free Standing Structures	Wheels & Axels	Fruit Smoothies	Sliders & Levers	Templates and Joining Techniques	Veg Salad
Class 3 **Y3 & Y4**	Shell Structures	Simple Circuits & Switches	Healthy & Varied Diet	Levers & Linkages	2D Shape to 3D Product	Healthy and Varied Diet
Class 4 **Y5 & Y6**	Frame Structures	More Complex Circuits & Switches	Celebrating Culture & Seasonality	Pulleys & Gears	Combining Different Fabric Shapes	Celebrating Culture & Seasonality

IMPLEMENTATION - Rationale

We believe that Design & Technology should be inclusive to all. It should allow children to manage and take risks and develop their understanding of design processes – from research, initial designs, prototypes and final products.

We teach Design & Technology through 'Project Days' which are dedicated off-timetable from the rest of the curriculum and usually last 2-3 days. We hold these days twice a year. We believe that the exclusive time to focus on D&T projects allows children to gain a sufficient understanding and see links between other curriculum areas. We time these 'Project Days' to allow visits and visitors to offer a broader range of experiential learning for our children. Often, our visit days culminate in a 'Celebration Event' where parents are invited to view not only the finished product, but the entire making stage.

Key skills and key knowledge for D and T have been mapped across the school to ensure progression between year groups. This also ensures that there is a context for the children's work in Design and Technology; that they learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study. Design and Technology lessons are also taught as a block so that children's learning is focused throughout each unit of work. We utlilise our community and specialists within our local area to enthuse children and ensure they see how D&T is used in their everyday lives.

IMPACT

We ensure the children:

• 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 and 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. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child

Children 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.

Our Design & Technology work is celebrated and assessed for impact through:

1. Annual reporting to parents
2. Use of the school assessment tracker
3. Shared discussion with staff after 'Project Days'
4. Whole school displays
5. Examples of the D&T process on social media and the school website
6. Pupil questionnaires