Design and Technology

Art and Design Technology Whole School Topic Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Art:** **Self Portraits** *Focus: painting*	**DT:** **Community Tapestry** *Focus: textiles*	**DT:** **Creating a Moving Toy** *Focus: mechanisms*	**Art:** **Dinosaur Sculptures** *Focus: 3d free standing sculptures*	**DT:** **Homes** *Focus: structures*	**Art:** **Matisse 'The Snail'** *Focus: collage – colour/texture/pattern*
Year 2	**Art:** **Houses** *Focus: drawing/ 3D modelling*	**DT:** **Vehicles** *Focus: wheels and axis*	**Art:** **Van Gogh – sunflowers** *Focus: painting*	**DT** **Pirate Picnic** *Focus: food preparation*	**DT:** **Puppets** *Focus: templates and joining*	*Art:* **African Landscapes** *Focus:* collage – texture/form
Year 3	**Art:** **Cave Drawings** *Focus: charcoal*	**DT:** **Waterproof Travel Bag** *Focus: textiles 2D design to 3D product*	**Art:** **Roman Mosaics** *Focus: space/form*	**DT:** **Survival Structure** *Focus: shell structure / CAD*	**Art:** **Pottery** *Focus: clay*	**DT:** **Healthy Lunchbox** *Focus: food preparation*
Year 4	**Art:** **Still Life Drawing** *Focus: sketching*	**Art:** **Oscar Niemeyer** *Focus: photography comparison with UK structures*	**DT:** **Viking Boat** *Focus: levers and linkages*	**Art:** **Henri Rousseau** *Focus: collage*	**DT:** **Lights** *Focus: simple circuits and switches*	**DT:** **Erupting Volcanoes** *Focus: structures*
Year 5	**Art:** **Weaving** *Focus: building technique*	**Art:** **Watercolours** *Focus: painting*	**DT:** **Equipment for Space** *Focus: mechanisms*	**DT:** **Nutritious Dish** *Focus: food/culture/seasons*	**Art:** **Masks** *Focus: creativity in mediums*	**DT:** **Lighthouses** *Focus: complex switches and circuits*
Year 6	**Art:** **Sculptures** *Focus: clay*	**DT:** **Eco Living Tapestry** *Focus: joining fabric shapes*	**Art:** **Salvador Dali / Monet** *Focus: drawing/painting/tone/layer*	**Art:** **How was Picasso influenced by African sculpture?** *Focus: compare*	**Art:** **Henry Moore** *Focus: drawing/painting*	**DT:** **Shelters** *Focus: pulleys and gears*

These are the overall skills that children need to learn to make progress:

a. observe and explore to generate ideas, define problems and pose questions in order to develop investigations and products
b. engage safely in practical investigations and experiments and gather and record evidence by observation and measurement
c. apply practical skills to design, make and improve products safely, taking account of users and purposes
d. communicate and model in order to explain and develop ideas, share findings and conclusions
e. to continually make systematic evaluations when designing

How will the children be enabled to do this? 'Breadth of Learning'
a. When investigating science and design and technology children should: • share their expertise in subjects that interest them and respond to relevant and current issues, locally and in the national media • apply their knowledge and understanding in real-life contexts, relating it to the world around them and visiting places to learn about science and design and technology • work with experts and enthusiasts to find out how science and design and technology are used and applied in day-to-day life **b. Children should use investigations and designing and making activities to:** • explore a range of familiar and less familiar contexts, environments and products • develop practical skills that will help them to carry out investigations and to make functional products from their design ideas • use design and technology contexts to develop scientific understanding and apply their scientific knowledge to inform their designing and making • work collaboratively towards a common goal by sharing ideas, making compromises, negotiating and providing feedback **c. When applying their knowledge and understanding of science and design and technology children should:** • think creatively and inventively about how things work, identify patterns and establish links between causes and effects • test their ideas through practical activities and review their own and others' ideas and investigations, designs and products • carry out their own investigations, deciding what kind of evidence to collect and what equipment and materials to use • suggest the results they expect and explain their observations and the significance and limitations of the conclusions they draw **d. When developing their own design ideas children should:** • explore ways of improving designs for products, mechanisms, structures, systems and control • investigate different materials, and use them to provide functional solutions to meet user needs, evaluating and refining their products as they work

Key Learning Intentions: Years 1 and 2	Key Learning Intentions: Years 3 and 4	Key Learning Intentions: Years 5 and 6
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	**Design** • use research to inform the design of functional, appealing products that are fit for purpose, aimed at an audience • develop, model and communicate their ideas through discussion, annotated sketches, prototypes, and pattern pieces	**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, pattern pieces and computer-aided design
Evaluate • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria •	**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	**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 understand how key events and individuals in design and technology have helped shape the world
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.	**Technical knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products, such as pulleys, levers and linkages	**Technical knowledge** • understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages • understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors • apply their understanding of computing to programme, monitor and control their products.
Key Skills	**Key Skills**	**Key Skills**
Year 1 • I generate ideas for purposeful designs • I use tools and manipulate materials with help, where needed • I recognise features of familiar products • With help, I can create products for a user and purpose • I use models, pictures and words to describe what I want to do • I explain what I am making and which tools I am using • I talk about my own and other people's work and describe how a product works Year 2 • I generate ideas based on my investigations of products • I plan what to do next based on my experience of working with materials and components • I recognise features of familiar products • I assemble, join and combine materials and components in a variety of ways to make functional products • I select appropriate tools, techniques and materials, explaining my choices • I use models, pictures and words to describe my designs I recognise what I have done well and suggest things I could do better in the future	Year 3 • I generate ideas. • I make appropriate plans to achieve my aims. • I choose appropriate tools and equipment to make my functional products. • I think ahead about the order of my work I assemble, join and combine materials and components in a variety of ways to make functional products • I clarify ideas when asked. • I use words, labelled sketches and models to communicate the details of my designs. • After reflecting on the design and make process and my products, I identify some improvements Year 4 • I recognise that my designs have to meet a range of different needs and users • I choose appropriate tools, equipment, components and techniques to make my functional products • I make realistic plans for achieving my aims • I apply my knowledge and understanding of the nature of materials to cut shape and join them with some accuracy • I can explain my work to a partner using technical vocabulary After reflecting on the design and make process and my products, I make improvements	Year 5 • I generate ideas by collecting and using information • I take users' views about aesthetic and technical issues into account as I respond to briefs • I use some ideas from others' designs to inform my own work • I produce step-by-step plans and then select and work with a range of tools and equipment • I apply my knowledge and understanding of materials, ingredients and components, and work with them with some accuracy, paying attention to quality of finish and to function • I communicate alternative ideas using words, labelled sketches and models, showing that I am aware of constraints • I identify what is working well and what could be improved to overcome technical problems • I reflect on my designs as they develop, drawing on previous experience Year 6 • I use my understanding of others' designs as I develop my work • I work from my own detailed plans, modifying them where appropriate. • I show understanding of aesthetic and economic factors • I respond to briefs showing understanding of how culture and society are reflected in products. • I work with a range of tools, materials, ingredients, equipment, components and processes with some precision • I clarify my ideas through discussion, drawing and modelling • I check my work as it develops, solve technical problems and show some creativity as I modify my approach I test and evaluate my products, showing that I understand the situations in which the products will be used
Cooking and Nutrition • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.	**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	**Cooking and Nutrition** • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Handford Hall Primary School