Somerleyton Design and Technology

Our design and technology curriculum aims to inspire pupil's creativity in the design and manufacture of purposeful and practical products. Pupils will undertake projects based on a clear sequence of designing, making and evaluating products that solve problems and appeal to specific users.

DT opportunities will be closely linked with other curriculum areas such as Science, Maths, PSHE, Computing and History, however subject content will be taught and assessed explicitly.

At Somerleyton Primary School we aim for all our children to be given the opportunity to:

- Develop creative ideas for innovative products
- Build on practical skills through the use of tools and equipment
- Understand how innovation and design is intrinsic to human development and history
- Extend key technical knowledge and vocabulary
- Confidently critique their own ideas, designs and products
- Learn from the ideas, designs and products of others
- Design and make 'something' for 'somebody' for 'some purpose'

"Design creates culture. Culture shapes values. Values determine the future." Robert L. Peters

Design and Technology Overview
Key Stage One

The teaching and implementation of the Design and Technology Curriculum at Somerleyton School is focused on improving the children's knowledge, understanding and skills needs to engage in the process of design and making. The children will work across a range of contexts – for example our school allotment, learning garden and school community.

The children have blocks of timetabled lessons which over the course of the two year cycle include resistant materials, textiles and cooking. The lessons can be linked to history, geography or science or can be developed from another stimuli introduced by staff or children. The children will have the opportunity to use appropriate tools and equipment across the design and manufacturing process.

Designers and craftspeople from a wider range of cultures, eras and life experiences will be explored as stimuli for our children's work.

Vocabulary marked with a star indicates this term has been introduced at a previous milestone and is included in order to recap prior learning.

	Design and Technology		
Cycle 1	Cooking and Nutrition	Structures	Textiles
Cycle 2	Structures	Cooking and Nutrition	Mechanical Systems

DT Vocabulary Progression

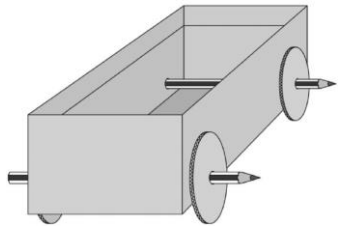
Reception	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition
	Slice Grate Chop Dough Nutrition Food group Yeast Hygiene	Dicing Kneading Savoury Diet (Balanced) Cuisine Grown Reared caught	Seasonality Carbohydrates Proteins Processed Ultra-processed Aroma Basic Tastes
	Structures	Structures	Structures
	Design Model Join Product Tool	Stiffen Strengthen Reinforce Stability Shell structure	Mitre joint Bench hook Bracket Chassis
	Mechanical Systems	Mechanical Systems	Mechanical Systems
	Pivot Shaping Joining Wheels Sliders Axle	Levers Linkages Pneumatics Control Process	Gears Cams Pulleys Monitor Follower Reciprocating Oscillating

DT Vocabulary Progression			
Reception	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
		Electrical Systems Circuit Switches Cell Switch Bulbs Conductor Insulator Appliance	Electrical Systems Resistor Battery Series circuits Buzzers Motors
	Textiles Running stitch Needle Thread Material Embellish Weave	Textiles Backstitch Blanket Stitch Hem Seem Warp Weft	Textiles Renewable Wadding Seam allowance
	Design and Evaluate Purposeful Functional Appealing Products Design Criteria Templates Mock-ups	Design and Evaluate Research Innovative Audience Cross-sectional diagrams Exploded diagrams Prototypes Analyse Aesthetic	

Mechanical Systems

Mechanical Systems	
Children will learn how to design and use mechanical systems including levers, wheels and axles. Children then design, make and evaluate their own designs and made any modifications they feel are needed to make them suitable for the purpose and audience that they have been designed for. Ideas for systems will be purposeful utilising our school community and environment wherever possible.	
Key Skills	• generate, develop, model and communicate their ideas through talking, drawings and making templates • select from and use a wide range of materials and components, including construction materials • explore and use mechanisms
Possible Outcomes	• Moving pictures • Vehicles • Pop-up books
Useful links	KS1-Mechanical systems | STEM
Significant people	Jan Pieńkowski Claire Williams

Key Vocabulary	
Pivot	the central point, pin, or shaft on which a mechanism turns
Shaping	give a particular shape or form to
Joining	To link or connect two or more objects together
Wheels	a circular object that revolves on an axle to enable it to move easily over the ground.
Sliders	a knob or lever that is moved horizontally or vertically to control a variable
Axle	a rod or spindle passing through the centre of a wheel



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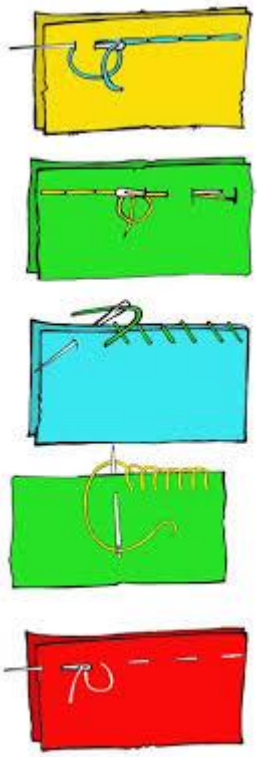
Textiles

Textiles	
Children have the opportunity to design, make, use and evaluate products made from textiles. They utilize a range of cutting and sewing techniques to make a purposeful product able to be used by themselves or another. They apply their skills from other curriculum areas to embellish their products with aesthetic design.	
Key Skills	• design purposeful, functional, appealing products for themselves and other users based on design criteria • select from and use a range of tools and equipment to perform practical tasks for example, cutting, joining and finishing • evaluate their ideas and products against design criteria
Possible outcomes	• Weaving • Pockets • Spoon puppets • Bookmarks • Fabric faces
Useful links	KS1- Textiles | STEM
Significant people	Jim Henson Shari Lewis



Key Vocabulary	
running stitch	a simple stitch which runs back and forth through the cloth without overlapping
Needle	a slender piece of polished metal with a point at one end and a hole or eye for thread at the other, used in sewing
Thread	a long strand of cotton, nylon, or other fibres used in sewing or weaving
material	a piece of cloth or fabric
Weave	form by interlacing long threads passing in one direction with others at a right angle to them.
embellish	make more attractive by the addition of decorative details

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Examples of work

Fabric Faces – Year 1 and 2

Cooking and Nutrition

Cooking and Nutrition	
Children utilise our school allotment and learning garden to provide the stimulus for recipes and cooking. Children connect the manufacturing of food with the science of fertilization, growth and plan nutrition. Children see cooking as a necessary life skill, and one in which they can be creative and develop a knowledge of the world.	
Key Skills	• design purposeful, functional, appealing products for themselves and other users based on design criteria • select from and use a wide range of ingredients according to their characteristics • explore and evaluate a range of existing products
Possible outcomes	• Soups • Breads and other baked goods • Dips and dippers • Fruit kebabs
Useful links	KS1-Cooking and nutrition | STEM
Significant people	Yotam Ottolenghi Katy Ashworth Nadiya Hussain

Key Vocabulary	
chop	cut into pieces with repeated sharp blows of a knife
dough	a thick, malleable mixture of flour and liquid, used for baking into bread or pastry
nutrition	the process of providing or obtaining the food necessary for health and growth
food group	any of a number of categories into which types of food are classified into
yeast	a fungus used in baking to make dough rise
hygiene	practices that help to maintain health and preventing disease, especially through cleanliness

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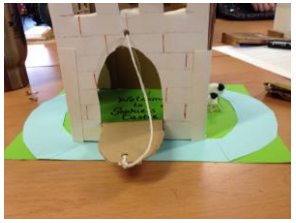
Examples of work

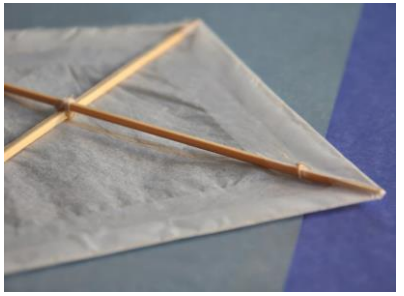
Mexican Wraps and Fillings– Year 1 and 2

Structures

Structures	
Children will experience challenges including packaging, sculptures, buildings, bridges and planes. Children will have the opportunity to explore different structures looking at the materials they are made from, how they are joined together and how strong they are. There are a range of authentic contexts for children to design, make and evaluate their own designs and made any modifications they feel are needed to make them suitable for the purpose and audience that they have been designed for.	
Key Skills:	• Generate, develop, model and communicate their ideas through talking, drawing and making templates • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping • Explore and evaluate a range of existing products
Possible outcomes:	• Kites • Castles • Buildings
Useful links:	KS1 Design and Technology - England - BBC Bitesize KS1-Structures | STEM
Significant people	I.M.Pei Norman Foster Sir Peter Fitzosbert

Key Vocabulary	
Design	a plan or drawing produced to show the look, function or workings of an object before it is made
Model	a three-dimensional representation of a of a proposed structure
Join	to link or join together
Product	an article that is manufactured or refined, usually for sale
Tool	an implement used to carry out a particular function





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