Stoke By Nayland C of E Primary School

EYFS/KS1 Design and Technology 2 Year Knowledge and Skills Cycle

Cycle 1					
	Skills			Knowledge	
	Purpose (Design)	Technique (Make)	Evaluation (Evaluate)	Technical	Additional
<u>Autumn</u> Structures - Constructing a Windmill	Learning the importance of a clear design criteria ·Including individual preferences and requirements in a design • To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) • To understand that axles are used in structures and mechanisms to make parts turn in a circle • To begin to understand that different structures are used for different purposes • To know that a structure is something that has been made and put together	Making stable structures from card, tape and glue • Learning how to turn 2D nets into 3D structures • Following instructions to cut and assemble the supporting structure of a windmill • Making functioning turbines and axles which are assembled into a main supporting structure To understand that the shape of materials can be changed to improve the strength and stiffness of structures	Consider the effectiveness of the windmill Review moving parts – do they move Refer to original design …	• To understand that the shape of materials can be changed to improve the strength and stiffness of structures • To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) • To understand that axles are used in structures and mechanisms to make parts turn in a circle • To begin to understand that different structures are used for different purposes • To know that a structure is something that has been made and put together	• To know that a client is the person I am designing for • To know that design criteria is a list of points to ensure the product meets the client's needs and wants • To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity • To know that windmill turbines use wind to turn and make the machines inside work • To know that a windmill is a structure with sails that are moved by the wind • To know the three main parts of a windmill are the turbine, axle and structure
<u>Spring</u> Textiles - Puppets	• Using a template to create a design for a puppet	• Cutting fabric neatly with scissors • Using joining methods to decorate a puppet • Sequencing steps for construction	• Reflecting on a finished product, explaining likes and dislikes	• To know that 'joining technique' means connecting two pieces of material together • To know that there are various temporary methods of joining fabric by using staples. glue or pins • To understand that different techniques for joining materials can be used for different purposes • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times • To know that drawing a design idea is useful to see how an idea will look	
<u>Summer</u> Food - Fruit and Vegetables	• Designing smoothie carton packaging by-hand or on ICT software Design and create a smoothie that contains fruit and or vegetables	• Chopping fruit and vegetables safely to make a smoothie • Identifying if a food is a fruit or a vegetable • Learning where and how fruits and vegetables grow	• Tasting and evaluating different food combinations • Describing appearance, smell and taste • Suggesting information to be included on packaging	To consider what makes a healthy smoothie To understand that fruit and vegetables are healthy choices To understand that some fruits have more sugar in than others	• Understanding the difference between fruits and vegetables • To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber) • To know that a blender is a machine which mixes ingredients together into a smooth liquid • To know that a fruit has seeds and a vegetable does not • To know that fruits grow on trees or vines

					• To know that vegetables can grow either above or below ground • To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber)
Cycle 2					
	Skills			**Knowledge**	
	Purpose (Design)	**Technique (Make)**	**Evaluation (Evaluate)**	**Technical**	**Additional**
<u>Autumn</u> Structures - Baby Bears Chair	Generating and communicating ideas using sketching and modelling • Learning about different types of structures, found in the natural world and in everyday objects	Making a structure according to design criteria • Creating joints and structures from paper/card and tape • Building a strong and stiff structure by folding paper	Exploring the features of structures • Comparing the stability of different shapes • Testing the strength of own structures • Identifying the weakest part of a structure • Evaluating the strength, stiffness and stability of own structure	• To know that shapes and structures with wide, flat bases or legs are the most stable • To understand that the shape of a structure affects its strength • To know that materials can be manipulated to improve strength and stiffness • To know that a structure is something which has been formed or made from parts • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move • To know that a 'strong' structure is one which does not break easily • To know that a 'stiff' structure or material is one which does not bend easily	• To know that natural structures are those found in nature • To know that man-made structures are those made by people
<u>Spring</u> Mechanisms - Fairground Wheels	• Selecting a suitable linkage system to produce the desired motions • Designing a wheel Selecting appropriate materials based on their properties	• Selecting materials according to their characteristics • Following a design brief	• Evaluating different designs • Testing and adapting a design	• To know that different materials have different properties and are therefore suitable for different uses	• To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder • To know that it is important to test my design as I go along so that I can solve any problems that may occur
<u>Summer</u> Mechanisms - Moving Monsters	• Creating a class design criteria for a moving monster • Designing a moving monster for a specific audience in accordance with a design criteria	• Making linkages using card for levers and split pins for pivots • Experimenting with linkages adjusting the widths, lengths and thicknesses of card used • Cutting and assembling components neatly	• Evaluating own designs against design criteria • Using peer feedback to modify a final design	• To know that mechanisms are a collection of moving parts that work together as a machine to produce movement • To know that there is always an input and output in a mechanism • To know that an input is the energy that is used to start something working • To know that an output is the movement that happens as a result of the input • To know that a lever is something that turns on a pivot • To know that a linkage mechanism is made up of a series of levers	• To know some real-life objects that contain mechanisms

Design and Technology is taught for a half term block every term.