



South Gosforth First School
Design & Technology – Year 1 Long Term Plan



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

In line with the National Curriculum for Design Technology it is our aim 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.



Autumn	Sliding Picture Book (Mechanisms)	
Character Culture Creativity Challenge	Prior Learning Pupils in Reception will have made verbal and pictorial plans as part of their Play Projects. Across their continuous provision they will have developed fine motor skills and scissor skills with various materials. They will have joined materials in different ways. They will have described their model, how it was put together and given a verbal evaluation of their model, with adult support.	
	Key Learning Intentions (Skills) Design: To explain how to adapt mechanisms, using bridges or guides to control the movement. To design a moving story book for a given audience. Make: To follow a design to create model that uses levers and slides. To use a range of tools and equipment. Evaluate: To test the finished product. To review the success of the project with its intended audience.	
	Key Learning Intentions (Knowledge) To know that... • a mechanism is the parts of an object that move together. • a slider mechanism moves an object from side to side or up and down. • a slider mechanism has a slider, slots, guides and an object. • bridges and guides are bits of card that purposefully restrict the movement of the slider.	Key Vocabulary adapt assemble design design criteria input mechanism model sliders test
	Overview of outcomes Children will identify whether a mechanism is a side-to-side slider or an up-and-down slider and determine what movement the mechanism will make. They will clearly label drawings to show which parts of their design will move and in which direction. They will make a picture that meets the design criteria, with parts that move purposefully as planned. The unit will finish with the children evaluating the main strengths and weaknesses of their design and suggest alterations.	
	Milestones of Learning	
	Exploring sliders and movement	Children will: understand that sliders are mechanisms, identify that sliders can make things move, create moving models that use sliders, use the words up, down, left and right to describe movement.
	Design a moving picture	Children will: draw background pictures, draw moving parts, decide which slider is best and label the movement of the slider.
	Construct a moving picture	Children will: make a moving storybook with a background and characters, make sliders for my moving parts, put all my parts together to create my moving storybook.
Evaluate finished product	Children will: review the success of my product by testing it (reading it to reception children), evaluate my product against the design criteria, consider what I have learnt from making my moving storybook.	



Spring	Wheels and Axles (Mechanisms)	
Character Culture Creativity Challenge	Prior Learning In their previous unit pupils have further developed their design skills, adding labels to their drawings. They have been introduced to the idea of design criteria and a product having a purpose. The children are familiar with mechanisms of sliders. They have discussed what they did well in their previous project.	
	Key Learning Intentions (Skills) Design: To design a vehicle that includes functioning wheels, axles and axle holders Make: To make a moving vehicle with working wheels, axles and axle holders Evaluate: To identify and explain design flaws using the correct terminology. To explain what must be changed if there are any operational issues.	
	Key Learning Intentions (Knowledge) To know that... - wheels move because they are attached to an axle - wheels and axles are used in everyday life, not just cars - a slider mechanism has a slider, slots, guides and an object. - bridges and guides are bits of card that purposefully restrict the movement of the slider.	Key Vocabulary Axle Axle holder Chassis Diagram Dowel Mechanism Wheel Equipment
	Overview of outcomes Children will learn about the main components of a wheeled vehicle. They will develop understanding of how wheels, axles and axle holders work. As a class or in groups they will problem-solve why wheels won't rotate using key vocabulary to describe what the issues. They will then design and build their own vehicle designs. The unit will finish with the children evaluating the main strengths and weaknesses of their design and suggest alterations.	
	Milestones of Learning	
	Understanding how wheels move	Children will: identify what mechanism makes a toy or vehicle roll forwards, know that in order for a wheel to move it must be attached to an axle, draw and label a diagram of an axle, wheel and axle holder.
	Identify what stops wheels from turning	Children will: fix a design so that the wheel can move, use appropriate vocabulary to describe which parts are moving or not
	Design a moving vehicle	Children will: design a moving vehicle, label their design using appropriate vocabulary
	Build a moving vehicle	Children will: make a wheel and axle mechanism, evaluate their design to make it even better.



Summer	Smoothies (Cooking and Nutrition)	
Character Culture Creativity Challenge	Prior Learning In reception the children have experienced cooking activities in groups, mixing and combining ingredients. They are familiar with a range of fruits through daily snack time.	
	Key Learning Intentions (Skills) Design: To select ingredients for a recipe Make: To prepare ingredients for a recipe. To follow a recipe. Evaluate: To give likes and dislikes of ingredients and existing products. To choose a favourite recipe.	
	Key Learning Intentions (Knowledge) To know that... • a blender is a machine which mixes ingredients together into a smooth liquid • a fruit has seeds and a vegetable does not. • Fruits grow on trees or vines • Vegetables can grow either above or below ground • Vegetables are any edible part of a plant	Key Vocabulary Blend Blender Chopping board Compare Recipe Root Leaf
	Overview of outcomes Children will be able to describe fruits and vegetables and explain how to identify fruits. They will name a range of places that fruits and vegetables grow. They will be able to describe basic characteristics of fruit and vegetables. They will prepare fruits and vegetables to make a smoothie. The unit will conclude with the children evaluating their product.	
	Milestones of Learning	
	Identify fruits and describe where fruits and vegetables grow	Children will: name fruits and vegetables, identify seeds, sort fruits and non-fruits, name places where fruits and vegetables grow, decide whether a fruit or vegetable will grow aboveground or underground, make predictions about where edible parts of plants will grow.
	Practise food preparation skills	Children will: use a fork to hold foods they are cutting, use a table knife to cut soft foods, use a juicer to get juice from fruits, work safely and follow instructions
	Select ingredients for a recipe	Children will: choose fruits and vegetables to taste, suggest fruits to put together based on taste, describe a food's taste, decide on three ingredients to create a recipe.
	Apply food preparation skills to a recipe and evaluate against the design brief.	Children will: select ingredients for a simple recipe, cut and juice fruits, use their senses to compare their smoothie with others, choose their favourite recipe, talk to the class about the design brief.