Medlar – with – Wesham C of E Primary School

Design and Technology Yearly Overview and Key Questions

"Children will be inspired to become curious learners, who have the resilience and confidence to succeed in life."

	Autumn	Spring	Summer
EYFS	**Expressive Arts and Design ELGs** **Creating with Materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function • Share their creations, explaining the process they have used. **Foundational Knowledge** Model naming and describing materials. Teach pupils to stretch, squash, roll, tear, scrunch and join materials. Model imaginative construction. • Explain choices of materials and shapes. scissor use and safety Cutting tape safely on and off a cutter The different types of fixing and which to use in different scenarios, including different types of glue and tape Correct use of cutlery Safe use of hole punches, staplers, trowels, hammer, hand drills, hand vice and saw		
Year 1/2 Cycle A	Mechanisms – How can you make a picture move? – Do I know the common uses for sliders? – Can I name the different methods to create card sliders? – Can I design and make a simple slider product and evaluate its success.	Structures – How can you stop a tower from toppling over? – Can I define 'a free standing structure'? Am I able to build free standing structures using a range of different materials?	Food and Nutrition – How does food affect your senses? – How does food affect our senses? – Can I explain why coloured food can be healthier? – Am I able to peel, chop and grate a selection of vegetables? – Am I able to modify food to suit food senses?
Year 1/2 Cycle B	Mechanisms – Are bigger wheels always better? – What are levers and linkages? – How can levers and linkages change the direction of a movement? – Can I design and make simple lever and linkage products? – Can I evaluate the success of outcomes? – What improvements would I recommend?	Food and Nutrition – How healthy is your food? – What is the difference between fresh food and ultra-processed foods? – How can I shape and form ingredients to make delicious foods? – Can I use a range of culinary techniques?	Structures - How strong is a piece of paper? (STEM DAY-WHOLE SCHOOL) – How can I make paper stronger? – What is 'a load'? – Can I fold paper to increase strength and stability? – Am I able to test and record how much weight paper can hold?

Year 3/4 Cycle A	Food and Nutrition – What's really in your food? – Do I know that processed foods have many added ingredients? – Can I make, roll and shape bread dough? – How do I make soup?	– Electrical Systems - How useful are switches? – Do I know a switch is an interruption of a circuit? – How are switches used in products? – Can I incorporate different types of switches into products to perform a function.	Structures – Which shapes will give a structure stability? (STEM DAY-WHOLE SCHOOL) – How does a triangle provide stability in a structure? – How do structural engineers support architects to ensure structures withstand forces? – Can I make triangles to form and join trusses? – Am I able to identify the forces that affect structures?
Year 3/4 Cycle B	– Textiles – How can you make a box out of cloth? – How can fabric be stiffened? – What solutions can I apply to stiffen fabric?	– Mechanisms – How can you do a lot of work with little effort? – What types of levers and linkages are there? – What is the key terminology related to levers and linkages? – How can levers and linkages change the direction of movement? – Can I design and make simplistic lever and linkage products? – Am I able to evaluate the success. Of outcomes and recommend improvements? –	– Food and Nutrition – How does food affect your body and mind? – How can food affect your body and mind? – Can I prepare and cook a range of vegetables? – Am I able to peel and grate a range of vegetables? – How do you add flavour and texture to foods? –
Year 5	Systems – How can we keep ourselves safe on the road? – What technology can be used to program and control a product? – Am I able to combine elements of my design knowledge to fulfil a brief?	Textiles – Which fabric is ideal for creating a functional and hardwearing lunch bag? - How can I waterproof cotton fabric? - Which fabrics are both functional and hardwearing? - How do you use beeswax to waterproof cotton fabric? - Can I repurpose a pair of jeans?	Food and Nutrition – What can we learn from different Culture's Diets? - How can foods be used as medicines? - How does eating food from different cultures help us be healthy? - Do I know how to roll and shape ingredients? - Do I know how to slice and ribbon a range of vegetables? - Can I stir fry vegetables? Structures – How are frames strengthened, reinforced and made rigid? (WHOLE SCHOOL STEM DAY)

			- Do I know engineers use a range of methods to strengthen and reinforce structures? - Can I identify and describe ways that frames are strengthened and reinforced?
Year 6	Food and Nutrition – Does food affect the way you feel? – What is the difference between slow release and quick release carbohydrates? – How can food improve mood and energy levels? – Can I dice, slice, peel, grate and cook a range of vegetables? – How can I make a sauce and stock? – How can height and colour be used to improve the visual appeal of food? Mechanisms – How do pulleys and gears let you see the world? – What are the different types of pulley systems and gears? – What are the common uses of pulleys and gears? – How can pulleys and gears create simple mechanisms and change direction of movement? – Can I design and make a model Ferris wheel powered by gears? – Can I evaluate the success of my outcome and recommend any improvements?	– Electrical Systems - Can switches perform more than one function? – Do I know that more than one switch can be used to change the functionality of a product? – Can I use switches to adapt a product in response to a design brief?	- Mechanisms – How do pulleys and gears let you see the world? - What are the different types of pulley systems and gears? - What are the common uses of pulleys and gears? - How can pulleys and gears create simple mechanisms and change direction of movement? - Can I design and make a model Ferris wheel powered by gears? - Can I evaluate the success of my outcome and recommend any improvements? - Structures – How strong is a piece of spaghetti? (WHOLE SCHOOL STEM DAY) – How can guy lines and flying buttresses support structures? – Is a short piece of spaghetti stronger? – How can I use a flying buttress to support a tower? Can I use appropriate lengths of spaghetti to increase strength and stability?