Subject Area: Design and Technology

Curriculum drivers: The curriculum is underpinned by the school's Curriculum Driver: Communication alongside our school values: Confidence, Compassion, Creativity and Curiosity.
The spiritual, moral, social and cultural development of our pupils and their understanding of the core values of our society are woven through the curriculum. The curriculum also consolidates the fundamental British values of democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs.

The knowledge and skills children learn must be co-ordinated and coherent. In order to achieve this in our curriculum, we have identified the key concepts or overarching ideas within each subject. To enable the children to access them, we call these the 'Big Ideas'. In Design and Technology these are: design, structures and mechanisms, cooking and nutrition and textiles.

EYFS

Design and Technology Objectives most closely linked to learning within the EYFS Framework (2021) and Development Matters come from;

Expressive Arts and Design (EAD)
The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials.

Physical Development (PD)
Gross and fine motor experiences development incrementally through early childhood. Gross motor skills provide the foundation for developing healthy bodies and social and emotional well-being. Fine motor control and precision helps with hand-eye co-ordination which is linked to early literacy. Children should be provided with opportunities to develop their core strength, stability, balance spatial awareness, co-ordination and agility through both indoor and outdoor games and opportunities. Additionally, opportunities to explore small world activities, puzzles, arts and craft will allow children to develop proficiency, control and confidence.

KS1 National Curriculum Aims

from the Design and Technology programmes of study: key stages 1 and 2 National curriculum in England;

- develop the creative, technical and practical expertise needed to perform everyday
- 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.

KS1 Pupils should be taught about:
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].
When designing and making, pupils should be taught to:
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

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

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.

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Cooking and nutrition
- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

KS1 Art curriculum 'Big ideas'.

Design

Looking at and evaluating existing designs and using this to inform our own thoughts and ideas. We translate our thoughts and ideas into our own designs.

Structures and mechanisms	**Cooking and nutrition**	**Textiles**
		
How materials can be joined to create structures and moving parts.	How to combine ingredients to make food and drink. Knowing which foods are healthier choices.	How materials are joined to form usable products.
Taught through.. Wheels and axels Making a moving character	Taught through.. A balanced diet - wrap making Smoothie making	Taught through.. Making a pouch and bunting Puppets

	EYFS	Year 1	Year 2
Design	*Teach children to...* - **choose and use different materials for different effects e.g. Paintbrushes, junk modelling.** COMMUNICATION, CREATIVITY	Teach children to... - **plan what they are making and state who it is for** COMMUNICAITON, CREATIVITY - create a template using their design - **explain their drawn designs** COMMUNICATION - test ideas by exploring materials, components and construction kits - label their design with appropriate vocabulary - **make a choice as to what ingredients they use and explain their choices** COMMUNICATION, CONFIDENCE	Teach children to… - **design a product that meets given criteria** CREATIVITY - explain how their product will be suitable for the intended user - use knowledge of existing products to help generate design ideas - communicate and model their ideas using a mock-up - **label their designs with technical vocabulary** COMMUNICATION - identify simple levers and sliders in moving books/products - **consider and review food combinations to design a finished product (e.g. sandwich)** CONFIDENCE, CREATIVITY

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Make	*Teach children to...* - **Build safely with large blocks and construction kits eg. A city with different buildings and a park, an obstacle course.** COMMUNICATION, CREATIVITY - **Hold scissors in one hand (may be incorrect grip) and cut along a line (straight and curved).** CREATIVITY, CONFIDENCE - **Use tools competently, independently and safely eg. Cutlery, scissors, paint brushes.** CREATIVITY, CONFIDENCE - **work collaboratively, sharing ideas, resources and skills** - **use one handed tools and equipment for example, making snips in paper with scissors.** CONFIDENCE - use Sellotape/masking tape and glue to join paper and other materials	Teach children to… - use a range of tools safely with adult support e.g. a knife for cutting, spreading - **select from and use a range of tools and equipment to perform practical tasks e.g.** a knife for cutting, spreading, peeler CONFIDENCE - **use scissors to cut and shape paper and fabric** CONFIDENCE, CREATIVITY - **use techniques such as cutting and spreading, with adult support** CONFIDENCE - **join fabric using glue or pins** CONFIDENCE, CREATIVITY - **join paper and card using glue, tape or staples** CONFIDENCE, CREATIVITY - assemble parts by correctly following instructions - use joining methods to add decoration to their product - use a template to mark their designs on to their chosen material - use wheels and axles to create movement	Teach children to… - **select from a range of tools and equipment to perform tasks, explaining their choices** CONFIDENCE - **mark out and cut materials accurately including textile**s CONFIDENCE - **work safely and hygienically, when working with food** CONFIDENCE - **manipulate ingredients using techniques such as kneading, rolling, cutting, spreading** CONFIDENCE - **thread a large-eyed needle and use it for running stitch** and back stitch - **finish off textiles neatly and evenly** CREATIVITY - **use joining techniques to make a structure stronger** CREATIVITY - pin fabric accurately for cutting and sewing - use different methods of folding paper to improve stiffness and strength - make sliding mechanisms - make simple lever and linkages to create movement

Evaluate	*Teach children to...*
	- **Evaluate and adapt creations with support** CREATIVITY, COMMUNICATION
	- **Talk about their creations. E.g. Why I chose materials/colours** COMMUNICATION
		Teach children to…
		- **say what was good and what was weaker in their product** COMMUNICATION
		- **review their design based on taste, explaining if they liked it or not** COMMUNICATION, CONFIDENCE
		- explore and evaluate a range of existing products
		- evaluate their finished product against design criteria
		- test their structure and mechanisms and alter parts that don't work, with adult support and guidance
			Teach children to…
			- **describe what went well, thinking about their design criteria** COMMUNICATION
			- **suggest improvements, thinking about their design criteria** COMMUNICATION
			- **evaluate products against design criteria, explaining specifically:**
			  - **how well they have made their product**
			  - **whether their product works correctly**
			  - **if their product is fit for purpose for the client** COMMUNICATION
			- evidence the evaluation of their product through a labelled drawing

Technical Knowledge required	Teach children… - **eating well contributes to good health** - fruit and vegetables are healthy - too much sugar is not healthy - **to explore different materials freely, in order to develop my ideas about them and what to make** CURIOSITY, CONFIDENCE - **to explore, use and refine a variety of artistic effects to express my ideas and feelings** CREATIVITY, CURIOSITY - **to use the language of designing and making (see key vocab below)** COMMUNICATION - to use senses to describe food	Teach children… - **that structures can be made stronger, e.g. by making thicker,** propping up, gluing **or using stronger material** CREATIVITY - **there is a need for hygiene when working with food** - that cylinders are a strong type of structure - which mechanisms make something roll - that an axel is needed to allow something to move - that ingredients have properties e.g. sweet, sour, soft, hard, and runny - to use appropriate vocabulary to describe movement - describe fruits and vegetables based on their appearance, feel, smell and taste	Teach children… - **how to create stable shapes and structures e.g. with wide, flat bases or legs** CREATIVITY - **that a mechanism is a collection of moving parts** - **levers and sliders help us move things** - **a lever is a handle, bar, or strip that turns around a pivot** - **wheels are fixed to axles; axles cannot be fixed to their holders** - **five fruit or vegetables a day helps make a healthy body** - **where to find nutritional information on food containers** COMMUNICATION - there is always an input and output mechanism - how much of each food group they should eat each day - that ideal ingredient combinations contain foods from more than one food group - backstitch is stronger than running stitch - **to identify natural and man-made structures** COMMUNICATION - **to identify when a structure is more stable or less stable** COMMUNICATION

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Vocabulary	**Receptive:** Ideas, plan, loose parts, tools **Expressive:** make, blocks, construction, shape, line, scissors, pencil, felt tip, crayon, chalk, picture, cut, glue, tape, build, Sellotape, masking tape, join, stir, pour, mix, fruit, vegetable,	**Receptive:** planning, investigating, utensils, design, evaluate, decoration, recipe, structure, framework, frame, **Expressive:** design, evaluate, decorate, fold, join, fix, stencil, stick, template, sticky, sharp, juicy, crunchy, sweet, crisp, sour, fruit, carton, ingredients, peel, peeler, slice, smoothie, vegetable, cut, chop, weak, strong, base, top, stable, weak, axle, model, fabric, glue, puppet, safety pin,	**Receptive:** Linkages, user, purpose, product, function, mechanical, mechanisms, input, output, stiffness, alternative, carbohydrates, protein **Expressive:** ideas, design criteria, evaluation, man-made, mould, template, diet, ingredients, sugar, dough, knead, yeast, flour, slicing, peeling, cutting, squeezing, fruit, vegetables, dairy, fats, lever, pivot, slider, axle, stable, stiff, structure, weak, sew, knot, pouch, felt, running stitch, back stitch, needles, thread, stencil,