Long term planning for Design Technology EY – KS2

	Design		Make		Evaluate	Technical knowledge		Cooking and nutrition
KS1	Design purposeful, functional and appealing products for themselves and others based on criteria	Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT	Select and use a range of tools and equipment to perform practical tasks: cutting, shaping, joining and finishing.	Select and use a wide range of materials and components, including construction materials, textiles and ingredients	• Evaluate a range of existing products; and • evaluate their own ideas against design criteria	Build structures and explore how they can be made stronger, stiffer and more stable	Explore and use mechanisms (levers, sliders, wheels and axles) in their products	• Use the basic principles of healthy and varied diet to prepare dishes; and • Understand where food comes from
KS2	• **Use research** • **Develop design criteria** • **Use their criteria** to inform the design of innovative, functional, appealing products that are fit for purpose and **aimed at particular individuals or groups.**	Generate, develop, model and communicate their ideas through discussion, **annotated sketches, cross-sectional and exploded diagrams**, prototypes, pattern pieces and **CAD**	Select and use a **wider** range of tools and equipment to perform practical tasks: cutting, shaping, joining and finishing **accurately**	Select and use a **wider** range of materials and components, including construction materials, textiles and ingredients according to their functional properties and aesthetic qualities.	• **Investigate** and analyse a range of existing products • Evaluate their ideas and products against **their own** design criteria **and consider the view of others to improve their work** • **Understand how key events and individuals in DT have helped shape the world**	Apply their understanding of how to strengthen, stiffen and **reinforce more complex structures**	• Understand and use mechanical systems in their products (**gears, pulleys, cams**, levers and linkages); • **Understand and use electrical systems in their products (i.e. circuits with switches, bulbs etc)** • **Apply their understanding of computing to program, monitor and control their products**	• **Understand** and apply the principles of a healthy and varied diet; • to prepare and cook a variety of **predominantly savoury dishes using a range of cooking techniques**; and • **Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed**.
Middle School coverage	• Y5 levers, puppet, buggy • Y6 moving toy, textiles • Y6 what is graphic design?		• Y5 Can you create a puppet? Sewing skills • Y5 How can you make and power a buggy? • Y6 Can you create a moving toy? • Y6 What is textiles?		• Y5 levers & puppet & buggy projects • Y6 Moving toy and textiles		• Y5 levers • Y5 powered buggy • Y6 moving toy	• Y5 Is eating five a day a healthy balanced diet? • Y5 & Y6 What is the rest of the world eating? • Y5 What would my own restaurant have on the menu? • Y6 Is counting calories healthy? • Y6 If I had my own Subway outlet, what would I see on my menu?

Early Years Design Technology

Expressive Arts and Design	**Early Learning Goals (end point)**
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. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.	**Fine Motor Skills** • Use a range of small tools, including scissors, paint brushes and cutlery • Begin to show accuracy and care when drawing **Creating with Materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour , design, form and function • Make use of props and materials when role playing characters in narratives and stories. • Share their creations, explaining the process they have used **Speaking** • Express their ideas and feelings about their experiences using full sentences **Listening, Attention and Understanding** • Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions • Make comments about what they have heard and ask questions to clarify their understanding **Managing Self** • Understand the importance of healthy food choices

EYFS	**Design**	**Make**	**Evaluate**	**Technical knowledge**	**Cooking and nutrition**
	• Explain what they are making and which materials they are using and why. • Select materials from a range that will meet simple design criteria e.g. scissors for paper. • Explore ideas by rearranging materials.	• Use scissors to cut straight and curved edges and hole punches to punch holes and use other basic tools such as a saw or hammer. • Use a range of adhesives to join material. • Create designs using basic techniques. • Build structures, joining components together. • Explore simple hinges, wheels and axles.	• Discuss how closely their finished products meet their design criteria. • Describe simple models or drawings of ideas and intentions • Discuss their work as it progresses, saying what they like and do not like about items they have made and attempt to say why.	• Use technical vocabulary when appropriate. • Select and name the tools needed to work the materials	• Develop food vocabulary using taste, smell, texture and feel. • Explore familiar food products e.g. fruit and vegetables and discuss the need for a variety of foods in a healthy diet. • Stir, spread, knead and shape a range of food and ingredients. • Work safely and hygienically. • Measure and weigh food items using non statutory measures e.g. spoons, cups

Design and Technology projects

		Autumn 1	Autumn 2	Spring	Summer
2022 - 2023	KS1	**Sensational Salads** *Links: plants (science), farms & food (geog) and being healthy (PSHE) Sustainability (eco-schools)* • Understand where our food comes from (in the context of both fruit and vegetables and fish) • Explore and evaluate a range of existing products • Use the basic principles of a healthy and varied diet to prepare dishes • Select from and use a range of tools and equipment to perform practical tasks • Evaluate their ideas against criteria	*Food technology continue with focus on History.* ***Grandparent's sweet treats*** • *Investigate how food has changed since your parents and grandparents were children.* • *Design and create 'sweet treats' from the time of your grandparent's childhood.* • *Select and use a range of tools and equipment to perform practical tasks.* • *Test and evaluate dishes with target audience.*	**Our fabric faces – making Greek Gods** *Links: Ancient Greece topic* • Explore and evaluate a range of existing products • Generate, develop, model and communicate their ideas through talking, drawing and using computers for design • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of textiles according to their characteristics • Design purposeful, functional, appealing products for themselves based on design criteria • Evaluate their ideas against design criteria	**Moving animal stories** *Links: previous theme of Farms and farming, animals in science and work in art.* • Explore and evaluate a range of existing products • Explore and use mechanisms in their products – sliders, levers and wheel mechanisms • Design a purposeful, functional and appealing product to illustrate a story – with annotated sketches • Make the product they have designed • Evaluate their ideas against design criteria • ***Forest school connection for KS1 & 2****: autumn: working with fleece, investigating spinning and textile work. Summer***:** Mayan animals, Mexican art
	KS2	**Edible garden** *Links: plants (science) and being healthy (PSHE)* • **Understand seasonality and know where and how a variety of ingredients are grown** • **Understand and apply** the principles of a healthy and varied diet • **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques** • Select from and use a **wider** range of tools and equipment to perform practical tasks accurately • Evaluate their dishes against their understanding of healthy food and agreed success criteria and consider the views of others to improve their work	*Food technology continue with focus on History.* ***Food from pre-history*** • *Prepare and cook a range of savoury dishes from stone age, bronze age and iron age times thinking about what food was available at those times.* • Select from and use a **wider** range of tools and equipment to perform practical tasks accurately • Evaluate their dishes against their understanding of healthy food and agreed success criteria and consider the views of others to improve their work	**Felt cases - Greek Key Pattern** *Links: Ancient Greece topic* • Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a given audience • Generate, develop, model and communicate ideas through discussion and annotated sketches • Select from and use a **wider** range of materials and components, according to their functional properties and aesthetic properties • Select from and use a wider range of tools and equipment to perform practical tasks accurately • Evaluate their ideas against **their own** design criteria and consider the views of others to improve their work	**Battery operated lighthouse** • Understand how key events and individuals in design and technology have helped shape the world • **Understand and use electrical systems in their products (for example incorporating switches)** • Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a given audience • Generate, develop, model and communicate ideas through discussion and annotated sketches • Select from and use a **wider** range of materials and components, according to their functional properties and aesthetic properties • Evaluate their ideas against their own design criteria and consider the views of others to improve their work

		Autumn 1	Spring	Summer
2023 - 2024	KS1	**Moving Pictures** *Links: London/ the Great Fire of London* • Explore and evaluate a range of existing products • Explore and use mechanisms in their products – sliders, levers and wheel mechanisms • Design a purposeful, functional and appealing product to illustrate a story – with annotated sketches • Make the product they have designed • Evaluate their ideas against design criteria	**Fabric flags** *Links: Ice Explorer – planting your flag at the poles / destination* • Explore and evaluate a range of existing products • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and using computers for design • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of materials and components, including textiles according to their characteristics • Evaluate their ideas against design criteria	**Forest school – large construction projects** *Links: Beginning of the Kingdom of England / castles / defensive buildings* • Explore and evaluate a range of existing products • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and using computers for design • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of materials and components, including outdoor large loose parts according to their characteristics • Evaluate their ideas against design criteria
	KS2	**Mechanical Posters – Eco-school** *Links: London / tourism in London* • **Investigate and analyse** a range of existing products • **Understand** and use **mechanical systems** in their products (levers and **linkages**) • **Use research and develop design criteria** to inform the design of innovative, functional and appealing products that are **aimed at a given audience** • Generate, develop, model and communicate ideas through discussion, annotated sketches and **prototypes** • Select from and use a **wider** range of tools and equipment to perform practical tasks **accurately** • Select from and use a **wider** range of materials and components, according to their **functional properties and aesthetic properties** • Evaluate their ideas against **their own** design criteria and **consider the views of others to improve their work**.	**Prayer Kites** *Links: RE People of God / world faiths – design a flag for different religions to symbolise their beliefs* • **Understand how key events and individuals in design and technology have helped shape the world** • Investigate and analyse a range of existing products • Select from and use a **wider** range of materials and components, according to their functional properties and aesthetic properties • **Use research and develop design criteria** to inform the design of innovative, functional and appealing products that are **fit for purpose** and aimed at a given audience • Generate, develop, model and communicate ideas through discussion and annotated sketches • Select from and use a **wider** range of tools and equipment to perform practical tasks accurately • **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures** • Evaluate their ideas against **their own** design criteria and consider the views of others to improve their work	**Forest school – large construction projects** *Links: beginning of the Kingdom of England / castles / defensive buildings* • Understand how key events and individuals in design and technology have helped shape the world • Investigate and analyse a range of existing materials and their possible uses • Select from and use a **wider** range of materials and components, according to their functional properties and aesthetic properties • **Use research and develop design criteria** to inform the design of innovative, functional and appealing products that are **fit for purpose** and aimed at a given audience • Generate, develop, model and communicate ideas through discussion and annotated sketches • Select from and use a **wider** range of tools and equipment to perform practical tasks accurately • **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures within more unusual and challenges contexts** • Evaluate their ideas against their own design criteria and consider the views of others to improve their work

Standalone design technology projects (see STEM days planning for more detail)

Structures: Building the strongest tower
Design and materials: egg drop challenge / how to keep teddy dry
Special festival food
Using the makey makey to explore circuits and making controllers and switches (link to computing and science)
Forest School Art (first half of autumn and summer term) includes use of tools and design technology skills
Structures and mechanisms:
STEM activity on constructing and testing windmill blades
STEM day on cause and effect (Rube Goldberg)

General Cross curricular links:

Computing: Apply their understanding of computing to program, monitor and control their products
Science: materials and plants, electricity and circuits
PSHE: keeping healthy and safe
History: Ancient Greece patterns for design / London / Ice Explorers / Kingdom of England
Geography: food miles and where in the world is our food from? / London tourism / ice Explorers