Long Term Sequence for Design & Technology

EYFS	Design	Make	Evaluate	Technical Knowledge	Food Technology
	-Begin to use the language of designing and making, e.g. join, build and shape. -Learning about planning and adapting initial ideas to make them better.	-To learn to construct with a purpose in mind. -Selects tools and techniques needed to shape, assemble and join materials.	-Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method.	-Know about the movement of simple mechanisms, such as levers, sliders, wheels and axles. -How to make freestanding structures stronger, stiffer and more stable. -To know the correct technical vocabulary for the project they are working on.	To begin to understand some of the tools, techniques and processes involved in food preparation. -Children have basic hygiene awareness.

Phase 1 / 2	**Understanding Materials 2** **How can you waterproof a hat?** *Interleaving science Autumn 2 – Materials and properties (waterproof/absorbent)* Pupils will know that materials can be modified to become waterproof. Know that Origami comes from the Japanese words: ori–folding and kami – paper. Pupils will be able to make paper waterproof and transform flat paper by folding and creasing to form a hat.	**Food and Nutrition 2** **What does healthy diet mean?** *Interleaving science Spring 1 - Animals including Humans Healthy Lifestyles & Food Working Scientifically:* *1.Hygiene* *2. Food Hygiene* Pupils will know why vegetables are so important to our health and what processed foods are. Pupils will be able to prepare a range of salad vegetables and shape and season a bread snack.	**Mechanisms 2** **Are bigger wheels always better?** Pupils will know how wheels and axles work together. Know that the size and position of wheels affects how they move. Pupils will be able to create a simple wheel mechanism and use wheel mechanisms to propel a simple vehicle.	**Structures 1** **How can you stop a tower from toppling over?** Pupils will know a freestanding structure isa structure that stands on its own foundation or base without attachment to anything else. Pupils will be able to build structures that are freestanding using a range of different materials.	**Textiles 1** **How can two pieces of fabric keep you warm?** *Interleaving science spring 2 – Animals including humans (hot and cold places)* Pupils will know that fabric can be joined together using a running stitch The types and names of tools needed for sewing. Pupils will be able to create a running stitch, select tools for sewing and thread a needle	**Food and nutrition 1** **How does food affect your senses?** *Interleaving spring science (animals including humans)* Pupils will know why colourful food can be healthier and how different foods can affect their senses. Pupils will be able to peel, chop and grate a selection of vegetables and to modify food to suit their food senses

Phase 3 / 4	**Mechanisms 3** **How can you do a lot with little effort?** *Interleaved with Autumn 2 forces and magnets* Pupils will know types of levers and linkages, key terminology relating to levers and linkages, how levers and linkages can change the direction of movement. Pupils will be able to design and make simplistic lever and linkage products and evaluate the success of their outcomes and recommend improvements	**Food and nutrition 3** **How does food affect your mind and body?** *Set in the context of PSHE spring 2* Pupils will know how food can help their body and mind and how to prepare and cook a range of vegetables. Pupils will be able to peel and grate a range of vegetables and add flavour and texture to foods	**Textiles 4** **How do you keep a tea towel from slipping off a hook?** Pupils will know fastenings have different functions. A shank provides a small amount of space between the button and fabric Pupils will be able to select appropriate fastenings and attach them to fabric. Make a shank for a button	**Electricity 4** **How useful are switches?** *Interleaved with Autumn 2 science – Electricity* Pupils will know a switch is an interruption in a circuit. Switches are widely used in a range of products Pupils will be able to incorporate different types of switches into circuits to perform a function	**Structures 4** **Which shape gives structures stability?** Pupils will know triangles provide stability in a structure. Structural engineers work with architects to ensure structures withstand forces Pupils will be able to make triangles to form and join trusses. Identify the forces that affect structures	**Food and Nutrition** **What do we mean by a balanced diet? (3)** **Is cheap food always worse for you? (4)** 3 – Pupils will know what is meant by the term balanced and why fresh foods are better. Pupils will be able to make a fruit and yoghurt dessert. Make homemade chips. Flavour foods to increase their sensory qualities. 4 – Pupils will know that cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food. Pupils will be able to peel, grate and chop vegetables to make economical, tasty and healthy food

Phase 5 / 6	**Mechanisms** **How can you lift a car onto a roof? (5)** **How do pulleys and gears let you see the world? (6)** 5 – Pupils will know types of gears and terminology relating to gears. Common uses of pulleys and gears. How pulleys and gears can change the direction of movement	**Food and nutrition 6** **Does food affect the way you feel?** *Set in the context of healthy lifestyles* Pupils will know the difference between slow release and quick release carbohydrates. How food can improve their mood and energy levels. Pupils will be able to dice, slice, peel, grate and cook a range of vegetables, make a sauce and a	**Textiles 5** **Which fabric is ideal for creating a functional and hardwearing bag?** Pupils will know how to waterproof cotton fabric. Which fabrics are both functional and hardwearing. Pupils will be able to use beeswax to waterproof cotton fabric. Repurpose a pair of jeans	**Food and nutrition 5** **What can you learn from different cultures?** *Set in the context of World Countries* Pupils will know how foods can be used as medicines. How eating food from different countries can help us be healthy. Pupils will be able to roll and shape ingredients. Slice and	**Structures 5** **How are frames strengthened, reinforced and made rigid?** Pupils will know that engineers use a range of methods to strengthen and reinforce structures. Pupils will be able to identify and describe ways that frames are strengthened and reinforced	**Electricity 6** **Can switches perform more than one function?** *Interleaved with science – electricity.* Pupils will know more than one switch can be used to change the functionality of a product Pupils will be able to use switches to adapt a product in response to a design brief.

	Pupils will be able to design and make products that use pulleys and gears to lift loads. Evaluate the success of their outcomes and recommend improvements 6 – Pupils will know types of pulley systems and gears. Common uses of pulleys and gears. How pulleys and gears can create simple mechanisms and change direction of movement Pupils will be able to design and make a model Ferris wheel powered by gears. Evaluate the success of their outcomes and recommend improvements	stock. Use height and colour to improve the visual appeal of food		ribbon a range of vegetables. Stir-fry vegetables.		

GCSE Subject Content

- new and emerging technologies
- energy generation and storage
- developments in new materials
- systems approach to designing
- mechanical devices
- materials and their working properties
- selection of materials or components
- forces and stresses
- ecological and social footprint
- sources and origins
- using and working with materials
- stock forms, types and sizes
- scales of production
- specialist techniques and processes
- surface treatments and finishes
- investigation, primary and secondary data
- environmental, social and economic challenge
- the work of others
- design strategies
- communication of design ideas
- prototype development
- selection of materials and components
- tolerances
- material management
- specialist tools and equipment
- specialist techniques and processes