Progression of Knowledge, Skills and Understanding- D.T

Autumn Term **Spring Term** **Summer Term**

	Year 1	Year 2

Design:
 	
To understand designing for purpose, to understand users and contexts
	• State what product they are designing.
	  ○ *Know and understand what designing means.*
	  ○ *Know what should be included in a design.*
	  ○ *Know the purpose of designing.*
	  ○ *Know and understand what a product is.*
	• Describe what their products are for.
	  ○ *Know and understand what a product is.*
	  ○ *Know and understand what is meant by purpose and design brief.*
	• Say who the intended user is for the product, themselves or someone else.
	  ○ *Know what is meant by target audience and why this is important when designing products for specific purposes/people.*
	• Work confidently within a range of contexts.
	  ○ *Apply taught skills so far e.g. cutting, joining.*
		• State what product they are designing and how it will be suitable for intended user.
		  ○ *Know and understand what designing means.*
		  ○ *Know what should be included in a design.*
		  ○ *Know the purpose of designing.*
		  ○ *Know and understand what a product is.*
		  ○ *Know and understand what is meant by suitable and why this is important.*
		  ○ *Know what is meant by intended user/target audience.*
		• Describe what their product is for, how the product will work and use simple design criteria to develop ideas.
		  ○ *Know what is meant by a design brief/criteria, why it is important and how it should influence their design.*
		  ○ *Know what a product is.*
		• Say who the intended user is for the product and to consider needs/preferences of users.
		  ○ *Know what is meant by target audience and why this is important when designing products for specific purposes/people.*
		• Work confidently and independently in a range of contexts.
		  ○ *Be familiar with a range of existing products.*
		  ○ *Apply taught skills so far e.g. cutting, joining.*

To generate, develop, model and communicate their ideas	• Develop and communicate their ideas by talking and drawing.
	  ○ *know and understand what is meant by purpose and function.*
	• Generate ideas from drawing on their own experiences.
	  ○ ***Be aware that some children may not have these experiences so learning needs to be relevant or come from existing products.***
		• Develop and communicate their ideas by talking and drawing.
		  ○ *know and understand what is meant by purpose and function.*
		• Use knowledge of own experiences and that of existing products to help come up with ideas.
		  ○ *Be familiar with existing products and their functionality.*
		• Model ideas by exploring materials and components by making templates and mock-ups.
		  ○ *Know what different objects are made from and the properties of different materials.*
		  ○ *Know what a mock up is and why they are and important part of D.T.*
		  ○ *Know what a template is, how to use it and why they are important/needed.*

**<u>Making:</u>
 	
To plan ready for making**
	• Select from a range of tools and equipment and begin to think about their choices.
	  ○ *Know how to use different tools safely.*
	  ○ *Be able to use the tools effectively e.g. scissors*
	  ○ *Be aware of the design brief and intended outcomes.*
	  ○ *Use their design effectively.*
		• Select from a range of tools, materials and components according to their characteristics. Use vocab to name and describe them
		  ○ *Know how to use different tools safely.*
		  ○ *Be able to use the tools effectively e.g. scissors*
		  ○ *Know what different objects are made from and the properties of different materials.*
		  ○ *Be aware of the design brief, intended outcomes and target audience and link this to their decision making/choices.*
		  ○ *Use their design effectively.*
		• Explain their choices.
		  ○ *Know the design brief/ criteria, purpose and target audience and explain why their choices are suitable.*
		  ○ *Understand what suitable and unsuitable means.*

To use practical skills and techniques to make a product	• Follow all safety procedures.
	  ○ *Know what the safety procedures are.*
	  ○ *Know why it is important.*
	• With help, begin to measure, mark out, cut and shape materials and components.
	  ○ *Know that different materials may cut differently.*
	  ○ *Know what components means.*
		• Follow all safety procedures.
		  ○ *Know what the safety procedures are.*
		  ○ *Know why it is important.*
		• Measure, mark out, cut and shape materials and components with increasing accuracy.
		  ○ *Know that different materials may cut differently.*
		  ○ *Know what components means.*

	○ *Know that materials have different properties and what they are.* • Use a range of materials and components. ○ *Know that materials have different properties.* • Use a range of tools and equipment. ○ *Know how to use a variety of tools and equipment safely.* • Begin to assemble, join and combine materials and components using a variety of temporary methods e.g glues or masking tape ○ *Know how to assemble and what that means.* ○ *Know how to use materials to join.* • Use simple finishing techniques to improve the appearance of their product	○ *Know that materials have different properties and what they are.* ○ *Know how to use a rulers to measure accurately.* • Use a wider range of materials and components. ○ *Know that materials have different properties and are suitable for different purposes.* • Use a wider range of tools and equipment. ○ *Know how to use a variety of tools and equipment safely.* • Assemble, join and combine materials and components with a higher quality finish sometimes using a variety of temporary methods e.g glues or masking tape. ○ *Know how to assemble and what that means.* ○ *Know how to use materials to join.* ● Cut, shape and join fabric to make a simple garment. • Use finishing techniques. ○ *Know what finishing techniques are.*
<u>Evaluation:</u> **To evaluate and explore existing products**	• Think about what they like about and dislike about products. ○ *Know different parts of products.* ○ *Know what to comment on/features.* • Think about what materials products are made from. ○ *Understand that objects are made from different materials.* ○ *Know and be able to name different materials and their properties.*	• Think about what they like about and dislike about products. ○ *Know different parts of products.* ○ *Know what to comment on/features.* ○ *Understand who the target audience is.* • Think about what materials products are made from and why. ○ *Understand that objects are made from different materials.* ○ *Know and be able to name different materials and their properties.* ○ *Know that different materials have different properties and are therefore suitable for different purposes depending on these properties.*
To evaluate own ideas and products	• Talk about own design and ideas. ○ *Know what a design is and what the different features are.* • Begin to talk about and suggest how their product can be improved. ○ *Have an awareness of the design brief and target audience.* • Evaluate according to the design brief/criteria.	• Make simple judgements about own design and ideas. ○ *Know what a design is and what the different features are.* • Suggest how their products can be improved and why they would improve it.

	○ *Know what the design brief and criteria are and how this influences the final product.* • Test whether the structure is strong and stable and alter it if it isn't. ○ *Know what a structure is.* ○ *Know what strong and stable mean.*	○ *Know what the design brief and criteria are and how this influences the final product.* • Evaluate according to the design brief/ criteria ○ *Know what a design brief is.* • Evaluating the strength, stiffness and stability of own structure. ○ *Know what a structure is.* ○ *Know what stability means.*
<u>Technical Knowledge-</u> **To be able to make products work**	• To build structures. ○ *Know what a structure is and how it should stand.* • Think about how their structure could be made stronger, stiffer and more stable. ○ *Know about the properties of materials.* ○ *Know about different joining techniques e.g. gluing, taping.* ○ *Know about existing products and designs used to make structures stronger, stiffer and more stable.* • Think about/ explore using simple mechanisms e.g. levers and sliders. ○ *Know and understand what a mechanism is.* ○ *Know what a lever is and how it works.* ○ *Know what a slider is and how it works.* ○ *know that mechanisms are a collection of moving parts that work together as a machine to produce movement.* • *To know that a lever is something that turns on a pivot.*	• Build structures knowing how they could be made stronger, stiffer and more stable. ○ *Know what a structure is and how it should stand.* ○ *Know about the properties of materials.* ○ *Know about different joining techniques e.g. gluing, taping.* • Explore and use mechanisms including levers, sliders, wheels, pivots and flaps. ○ *know some real-life objects that contain mechanism.* • Explore and use mechanisms to create movement such as wheels and axles in own products. ○ *Know and understand what a mechanism is.* ○ *Know what a lever is and how it works.* ○ *Know what a slider is and how it works.* ○ *know that mechanisms are a collection of moving parts that work together as a machine to produce movement.* ○ *know that there is always an input and output in a mechanism (an input is the energy that is used to start something working and an output is the movement that happens as a result of the input).* ○ *To know that a linkage mechanism is made up of a series of levers.* ○ *To know that a lever is something that turns on a pivot.* • *know some real-life objects that contain mechanisms.*

<u>Cooking and Nutrition:</u> **To understand and know where food comes from**	• Know that all food comes from plants or animals. ○ *Know what food is.* ○ *Know what plants and animals are.*	• Know that all food comes from plants or animals. • Understand food has to be farmed, grown or caught. ○ *Know what food is.* ○ *Know what plants and animals are.* ○ *Know that some food is modified and may contain different ingredients.*
To understand the principles of a healthy and varied diet.	• Understand that everyone should eat their 5 a day. ○ *Know what fruit and vegetables are.* ○ *Know what is meant by '5 a day'.*	• Understand the importance of eating 5 a day every day. • Name and sort foods into the 5 food groups. ○ *Know what fruit and vegetables are.* ○ *Know what is meant by '5 a day'.* ○ *Know what the 5 food groups are.* ○ *Know what is meant by healthy and unhealthy.* ○ *Know what is meant by balanced diet.*
To prepare dishes hygienically and safely.	• Begin to learn how to use techniques such as cutting, peeling and grating. ○ *Know how to use the equipment safely.* • Understand how to prepare simple dishes safely and hygienically, without using a heat source. *Know what is meant by hygiene.* ○ *Know how to use the equipment safely.* ○ *Use safe and hygienic practice.*	• Know how to use techniques such as cutting, peeling and grating. ○ *Know how to use the equipment safely.* ○ *How when to use different cooking tools.* • Understand how to prepare simple dishes safely and hygienically, without using a heat sources. ○ *Know what is meant by hygiene.* ○ *Know how to use the equipment safely.* ○ *Use safe and hygienic practice.*

KS1 National Curriculum Objectives- Design Technology

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

Notes for Teachers

D.T language and terms	Tools and Equipment *	Introducing and Revisiting Techniques
Find out if children have a prior awareness /knowledge of new vocabulary. Explicitly teach and, where possible, teach through first hand experiences. Check understanding of technical language throughout art teaching and address possible misconceptions as they arise. D.T terms are **highlighted** for your reference.	Can children tell teacher how to keep safe using tools/equipment before use? Reinforce knowledge, address any misunderstandings/gaps in safety awareness and directly teach how to be safe with new tools/equipment. Children should be shown how equipment is (used previously or new) used and used safely while taking into account children's initial understanding first.	• Follow guidance on language and terms, and tools and equipment. • Children will be given opportunities to practice key skills such as scissor skills regularly to support them with the making part of the process. • Model ALL new and previously taught techniques. • Give examples from other designer and makers. • Allow children time to explore new techniques for themselves. • Give time for reflection, evaluation and further exploration so children can deepen their skills and understanding. • Design, make and evaluate will continue each term/ each project as they are at the core of the design process.

		

Glossary
Axle- A rod or spindle either fixed or rotating, passing through the center of a wheel or a group of wheels **Design-** The purpose or planning that exists behind an action, fact or object **Develop-** to build up, grow or improve gradually overtime **Equipment-** the necessary items for a particular purpose **Evaluate**- the process of deciding if something has been done in the best way and wondering what could be improved **Function-** practical use or function in design **Ingredients-** the foods or substances that are combined to make a particular dish **Join-** become linked or connected to **Lever-** A stiff bar the moves around a pivot **Make-** Form something by putting parts together or combining substances **Material-** The matter from which a thing can be made **Mechanism-** A device used in a product to create movement **Model-** a thing used as an example to follow or imitate **Nutrition-** the process of providing or obtaining the food necessary for health and growth **Pivot-** A loose pivot is a central point or pin that joins levers together. A fixed pivot is a central point or pin that joins levers to the overall object

Product- the end result of the design and construction process
Purpose- the reason for which something is done or created
Recipe- a set of instructions for preparing a particular dish
Shape- give a particular shape or form to
Slider- A knob or lever that is moved horizontally or vertically to control a variable
Structure- A building or other object constructed from several parts
Template- A model or a guide for producing something
Tool- anything that is used to make a change to something else or to help do a job
Wheel- A circular object that revolves on an axle