Design and Technology Sequence and Progression at St Luke's C.E. Primary School

Intent:

We believe that Design and Technology (DT) is vital for all children as they implement skills and knowledge into their daily lives. From understanding what makes a healthy balanced diet and lifestyle to planning, designing and evaluating a project independently. The skills that our children learn are important not only in school but also in ensuring they have the opportunity to reach their potential when they leave our school. Our aim is to ensure children are inspired and motivated by implementing vital skills, such as; evaluating (others work and our own), planning, designing and creating. These skills come in useful across the St Luke's curriculum (in a variety of subjects) and progress clearly as the children advance through year groups. Children go on a journey; critiquing existing products, taking inspiration/applying what is good and improving areas that they believe could be better to their plans before planning, creating and evaluating their work. This process allows our children to see a clear systematic approach and gives them the opportunity to immerse themselves and apply it independently as they progress through school.

Implementation:

- **Comprehensive progression of skills in line with the National Curriculum.** Our curriculum follows the outline of the NC and allows fundamental skills to be taught in EYFS and KS1. As well as this, skills previously acquired are developed in KS2 and expanded upon as children progress through school. Furthermore, children learn additional skills, gain greater understanding and knowledge when necessary through DT projects in each year group. These projects follow the progression of skills taught and developed in each year group and apply to what the children are learning about in the wider curriculum as well, establishing cross-curricular links.
- **Independent learning.** As children progress, they will be asked more often to apply their skills independently. This gives children the ability to identify areas of strength and weakness, as well as giving them the opportunity to develop skills. This all contributes to our school aim of children learning without limits.
- **Cross-curricular links.** Children are taught a variety of skills in different lessons and are encouraged to use those skills in DT activities. Children apply what has been taught in lessons such as maths and English, allowing them to achieve to the best of their ability.
- **Language.** Children experience the use of relevant vocabulary to the subject of DT. Children are encouraged to use this vocabulary when possible.
- **Knowledge organisers.** Children make use of knowledge organisers in their research project. This covers Design and Technology and gives the children an idea of what they are going to learn as well as a reference to aid their learning through-out each topic.

Impact:

Children will be able to learn the fundamental skills required in Design and Technology.
Children will be able to develop their fundamental skills as they progress through school.
Children will achieve age related expectations in Design and Technology by the time they leave St Luke's.
Children can become independent in their application of Design and Technology, applying it to their work and becoming more confident in using DT in their daily lives.
Children are able to use correct and technical language that relates to Design and Technology.
Children are able to see the links between Design and Technology and other subjects as well as how one can help another.
Children can clearly see a development of their skills as they progress through school.

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

CULTURAL CAPITAL

In order to support our pupils as they become well-rounded individuals, we give every child the chance to experience a variety of opportunities that develop their creativity and imagination. During their time with us, we ensure children are introduced to inspiring individuals from the field; as well as ground-breaking developments in design, that inspire and influence their progression. Our school environment is one abundant with STEM inspiration that staff implement in their teaching and our children in their understanding and resilience to succeed. In Design and Technology, children actively develop their resilience through design, create and evaluate. Children are comfortable with doing their best to succeed, but are not afraid to refine their ideas and improve them from their own critiques and those of others. Children are encouraged to introduce individuality into their creative processes and are not afraid to push the boundaries and strive for the best; displaying pride in each part of their work. These skills and qualities hold our children in good stead, as they grow and learn to use these skills in all aspects of their lives.

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

Design and Technology Long Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Food (Baking Bread- Harvest)	Structures (play doh modelling)	Textiles (Sewing Fish - Under The Sea)		Textiles (Mini-beasts) Structures (Habitats)	
Year 1		Mechanisms (making a moving story book) Kapow		Structures (Constructing a windmill) Kapow		Textiles (puppets) Kapow
Year 2		Structures (Tudor houses)		Food (balanced diet)		Mechanisms (making a moving monster) Kapow
Year 3		Mechanical systems (pneumatic toys) Kapow	Structures (constructing a model Robot)		Electrical systems (Electric poster) Kapow	
Year 4		Textiles (Ancient Egypt - Fastenings/clothing) Kapow		Mechanical systems (launching system - Viking long ships) Kapow Textiles (Invaders and Settlers - Bayeux Tapestry)		Food (adapting a recipe) Kapow
Year 5		Mechanical systems (pop-up book) Kapow	Structures (bridges) Kapow		Digital world (Monitoring devices CAD)	

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

					Kapow	
Year 6		Textiles (Pouches)		Mechanical systems (automata toys) Kapow		Food (Woolton Pie)

National Curriculum Content				
EYFS	ELG: Creating with Materials Children at the expected level of development will: - 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; - Make use of props and materials when role playing characters in narratives and stories.			
	Autumn	Spring	Summer	Additional D.T
Year 1	**Mechanisms - making a moving story book** Children explore sliders and create their own moving story book. All children design, construct, test and evaluate. Linked to space topic.	**Structures - constructing a windmill** Children plan and create their own windmill.	**Textiles - puppets** Children use specific techniques to create product.	**Wooden toy** **Future alarm clock** **Food**
Year 2	**Structures - Tudor houses (Research Project)** Children explore stability and how to make structures sturdier. Children fix and test their creations.	**Food - balanced diet (Science)** Children understand variety of food groups and quantities needed for a healthy diet.	**Mechanisms - making a moving monster** Children plan different parts and assemble. Children add finishing detail and assess work.	**Creating props** **3D Reef Models** **Regattas**
Year 3	**Mechanical systems - pneumatic toys** Children develop understanding of pneumatics. Design and create own toy; with finishing details.	**Structures - constructing a model robot (Research Project)** Children research. Children gain understanding of nets and use this to develop their own structure.	**Electrical systems - electric poster** Children use information to fuel research and planning base.	**Mosaics** **Stone age pots** **Healthy packed lunches**

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

Year 4	**Textiles - fastenings** Children evaluate different fastenings and use design their own Ancient Eygptian clothing. Children make paper mock-up and prepare fabric, before assembly.	**Mechanical systems - Launching system** Children look at gathered information and design their own chassis and launch system. Children design their own body and create. Assemble various parts.	**Food - adapting a recipe** Children follow a recipe and test. Children make subtle changes, before budgeting their amounts to meet requirements. Final creation.	**Nativity Tie Dye/Batik** **Anglo-Saxon Jewellery** **Viking longships** **Kites**
Year 5	**Mechanical systems - pop-up book (Link to nowhere emporium (English))** Children analyse and then develop their own pop-up book design. After creation, children use spacers and layers to enhance product. Finally, children add illustration and writing to finish.	**Structures - bridges** Children research arch and beam bridges, as well as spaghetti truss. Children build their own bridges and apply their own finishing details. Focus on rigid and solid creations.	**Digital world - monitoring devices CAD** Children develop an understanding of monitoring devices and the need for them. Children identify specific animal requirements, before designing and creating their own. Children use CAD to support their work.	**Model Alps** **Victorian Dollhouses** **Greek recipes**
Year 6	**Textiles - pouches for Maya Worry Dolls (Research Project)** Children evaluate examples and design their own. Children then prepare fabrics, before assembling and decorating their products.	**Mechanical systems - automata toys** Children explore automata and develop their own frame (with assembly). They then apply CAMS and explore, before applying finishing detail.	**Food - Woolton Pie with Pegasus (Research Project)** Children analyse the breakdown of a three-course meal. Children plan and create their own.	**Stop/start animations** **Anemometers**

Progression of Skills						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

Designing						
Children can design a habitat with support. Design criteria includes supported sketches.	Children can create a design criterion, with help, for a moving story book, raft and puppets. Design criteria include sketches. Children design a functional product.	Children create a design criterion for a moving monster, food project and Tudor house. Design criteria includes sketches and rough mock ups of their monsters/Tudor houses. Children design purposeful, functional and appealing products.	Children create a design criterion for a pneumatic toy, model robot and electric poster. Design criteria includes annotated sketches, mock ups and prototypes to fuel inspiration. Children design purposeful, functional and appealing products that are aimed at a certain group/individual.	Children create a design criterion for a launching system, food recipe and textile project. Design criteria includes annotated sketches, mock ups and prototypes to fuel inspiration. Children design innovative, purposeful, functional and appealing products that are aimed at a certain group/individual.	Children create a design criterion for a pop-up book, bridge and electronic greetings card. Design criteria includes annotated sketches, mock ups, pattern-pieces, and prototypes to fuel inspiration. Children design innovative, purposeful, functional and appealing products that are fit for purpose and aimed at a certain group/individual.	Children create a design criterion for automata toys, Woolton pie and Maya toy pouch. Design criteria includes annotated sketches, mock ups, pattern-pieces, exploded diagrams and prototypes to fuel inspiration. Children design innovative, purposeful, functional and appealing products that are fir for purpose and aimed at a certain group/individual.
Making						
Children can experiment with support and guidance simple tools and	Children can use simple tools such as: rulers, scissors and pencils to aid making.	Children can choose specific equipment and tools to perform practical tasks.	Children use a wider range of given tools to complete practical activities.	Children use a wider range of given tools to complete practical activities.	Children select from and use a wider range of tools to complete practical activities accurately.	Children select from and use a wider range of tools to complete practical activities accurately.

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

techniques. Children are given a threaded (child safe) needle to begin sewing. Children are given a range of selected materials to create a habitat.	Children choose from selected materials to create structurally sound rafts.	Children choose from selected materials to suit their design criteria and products purpose.	Children use a wider range of given materials according to their functional properties. Children use construction materials, textiles and ingredients to suit their design criteria.	Children use a wider range of given materials according to their functional properties. Children use construction materials, textiles and ingredients to suit their design criteria.	Children select from and use a wider range of materials based on their functional and aesthetic properties. Children use construction materials, textiles and ingredients to suit their design criteria.	Children select from and use a wider range of materials based on their functional and aesthetic properties. Children use construction materials, textiles and ingredients to suit their design criteria.
Evaluating						
Children discuss how their product could improve and how it is different to others.	Children compare different moving story books and research simple raft designs. Children compare their finished products against their original design criteria.	Children can research and critique examples of the slider mechanism. Children critique their own finished products against their original design criteria.	Children investigate existing and analyse examples of pneumatic toys. Children evaluate their own products against the design criteria and consider the thoughts of others. Identify key individuals that have helped shape the world through design	Children investigate existing and analyse examples of launching systems. Children evaluate their own products against the design criteria and consider the thoughts of others. Identify key individuals that have helped shape	Children investigate existing and analyse examples of pop-up books. Children evaluate their own products against the design criteria and consider the thoughts of others. Identify key individuals and events that have	Children investigate existing and analyse examples of automata toys. Children evaluate their own products against the design criteria and consider the thoughts of others. Identify key individuals and events that have

Design and Technology Sequence and Progression at St Luke's C.E. Primary School

			and technology.	the world through design and technology.	helped shape the world through design and technology.	helped shape the world through design and technology.
Technical Knowledge and Understanding						
With support children discuss how to make each structure more stable. Children discuss how the weight of each product is important and if we change that the product would have a different result.	With assistance, children explore how to make structures stronger and stiffer. Children use slider mechanisms in their creation of a moving storybook, with adult help.	Children can make decisions on how to make Tudor houses stronger and more stable. Children use slider mechanisms in their creation of a moving storybook independently.	Children can use existing knowledge and develop new ideas to reinforce their model robot, with help. Children can use pressurised air as a mechanism to create a functional toy. Children can use electrical systems in their electronic posters.	Children can use existing knowledge and develop new ideas to create more forceful launching systems. Children can use pulleys and levers to create a launching system/mechanism for a Viking long ship.	Children can use existing knowledge, develop new concepts and choose from a variety of ideas to make structurally sound bridges. Children can use linkages and CAMS to create a mechanism in a pop-up book. Children can use electrical systems and CAD in their electric greeting card products.	Children can use existing knowledge, develop new concepts and choose from a variety of ideas to make fully functional automata toys. Children can choose what mechanical system best suits their automata toy and implement it successfully.