



Design Technology Policy

“For I know the plans I have for you”, declares the Lord, “plans to prosper you and not to harm you, plans to give you hope and a future”.

Jeremiah 29:11

Each of our children is a precious and unique individual, with God given talents and abilities, created to fulfil a special role in God’s intricate plan for the world.

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Curriculum Intent

Why Do We Teach Design Technology?

Design Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

We teach Design Technology to give our children a full understanding of the world around them and how it works. We aim for them to learn about inventors and inventions, manufacturing and engineering processes, textiles and food technology. Our children will be taught Design and Technology in a way that ensures the progression of skills and follows a sequence to build on previous learning. In learning about the way things work, children gain a deeper understanding of problem-solving and critical thinking. It is in this understanding and valuing of the processes behind production, that children will learn to treat everyday objects, advances in technology and their own bodies with the full respect that God intended.

What Do We Want To Achieve By Teaching Design Technology?

The National Curriculum for Design Technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- 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.



How Does Our Teaching of Design Technology Impact on Our Aims For Our Pupils?

We want children to leave St Leonard's with an excellent foundational understanding of textiles, joinery and carpentry, engineering and food technology. We want children to begin high school at the level needed to make good progress in Design Technology throughout their school lives.

We aim for children to have high aspirations and understand the roles and careers that Design Technology can offer them. We also hope for them to understand the genuine impact that it can have upon their lives and the lives of their families, community and global community and empower them to be the people that can achieve this. We aim for our children to use all that they have learnt to create a safer and healthier world and planet in the future.

How will our teaching of Design Technology enable our pupils to fulfil the plan God has for them?

From the building of the Ark by Noah, to Bezalel who was *"filled him with the Spirit of God in wisdom, in understanding, in knowledge, and in all kinds of craftsmanship"* (Exodus 31:2-5), creation and craftsmanship run through the Bible and our lives.

It is God's plan for us that we lovingly build and create for the benefit of our families and communities and do so in a way which supports and cherishes the world he made for us.

Through the studies of inventors and inventions, children will gain an appreciation for the resourcefulness and ingenuity given to man by a very creative God, the first of all creators.

Through the study of food technology children will learn of the beauty and completeness of the food provided for us by God - *And God said, "Behold, I have given you every plant yielding seed that is on the face of all the earth, and every tree with seed in its fruit. You shall have them for food. (Genesis 1:29) - and the importance of maintaining a healthy diet – Or do you not know that your body is a temple of the Holy Spirit within you, whom you have from God? You are not your own, for you were bought with a price. So glorify God in your body (1 Corinthians 6:19-20)*



FRUITS

As a Church of England school, everything we do is built around our FRUITS ethos.

Aim:	What contribution does Design Technology make to this:
<p>Faith - develop courage, resilience and patience, through their own personal faith in God, so they can retain hope and joy even during hard experiences. (John 1:12)</p>	<ul style="list-style-type: none"> - Understand the importance of a healthy diet to remain strong and well through difficult times - Have the patience to trust in trial and error as they problem solve - To be joyous in their achievements and successes - To enjoy processes as much as results
<p>Relationships - flourish through strong relationships with themselves, each other, creation and God. (Luke 10:27)</p>	<ul style="list-style-type: none"> - To learn about the inventors and inventions of the past and see their Design Technology learning as an extension of the collaboration of humankind before them in our progression in knowledge, skills and technology - To work with each other and their teachers as they seek to be creative and critical thinkers - To enjoy the kinesthetic beauty of creating things with their own hands
<p>Uniqueness - have the self-confidence to understand their uniqueness and God-given purpose to become the person God created them to be. (Matthew 10:30)</p>	<ul style="list-style-type: none"> - To not be discouraged with thoughts of inferiority in comparison to peers or to inventors of the past and to realise that each child brings their own unique ideas and inventiveness to the world and creation - To fulfil their full potential and explore all of the possible careers and elements of Design Technology to see if there is an area in which they would like to build a career - To understand that the many elements of Design Technology can be enjoyed as hobbies and not just as possible careers.
<p>Intellect – develop a keen intellect and use this talent and ability wisely to protect and enhance themselves, their communities and the environment. (Proverbs 3:13)</p>	<ul style="list-style-type: none"> - To fully explore their problem-solving skills including trial and error, inventiveness, critical thinking, linear and tangential thinking and creativity - To learn about and appreciate the intellect of inventors before them - To understand how skills and knowledge from other areas of the curriculum (maths, English, science, PE) and those unique to St Leonard's (Emotion Works, P4C) all become useful and relevant in Design Technology - To gain an understanding on how humans have impacted both positively and negatively on the planet and the ways in which we are seeking to



	<p>use technology to create a better future and reverse some of the harm we have done to the planet</p> <ul style="list-style-type: none">- To understand how the different elements of design technology can benefit our communities- To foster and develop a range of metacognitive skills which can benefit them in all areas of education and their life
<p>Treat themselves and others with dignity and respect maintaining a healthy body and thriving community. (1 Peter 2:17)</p>	<ul style="list-style-type: none">- To gain an understanding of 'necessary' technology - that which is essential to modern-day living – and technology for entertainment and pleasure- To gain understanding and respect for the evolution of Design Technology over the centuries before us- To understand healthy eating and food preparation and the importance it has for our bodies- To understand food waste and food miles and the impact, this has on our communities and planet- To understand the meaning of 'fair trade.'- To explore and enjoy food from other cultures and countries
<p>Salvation – have a recognition that we need to seek forgiveness through Jesus to become friends with God. (Ephesians 2: 8-9)</p>	<ul style="list-style-type: none">- To embrace failure as a sign of having tried and forgive their own errors in order to have the courage and faith to try again- To seek to undo or reverse the harm that some advances in technology have created for our planet and seek salvation for humankind by contributing towards more positive advances in and more responsible uses of technology- To understand how individuals and communities can reduce waste both with products and food- To understand how technology and inventions can begin to repair our oceans, forests and ozone



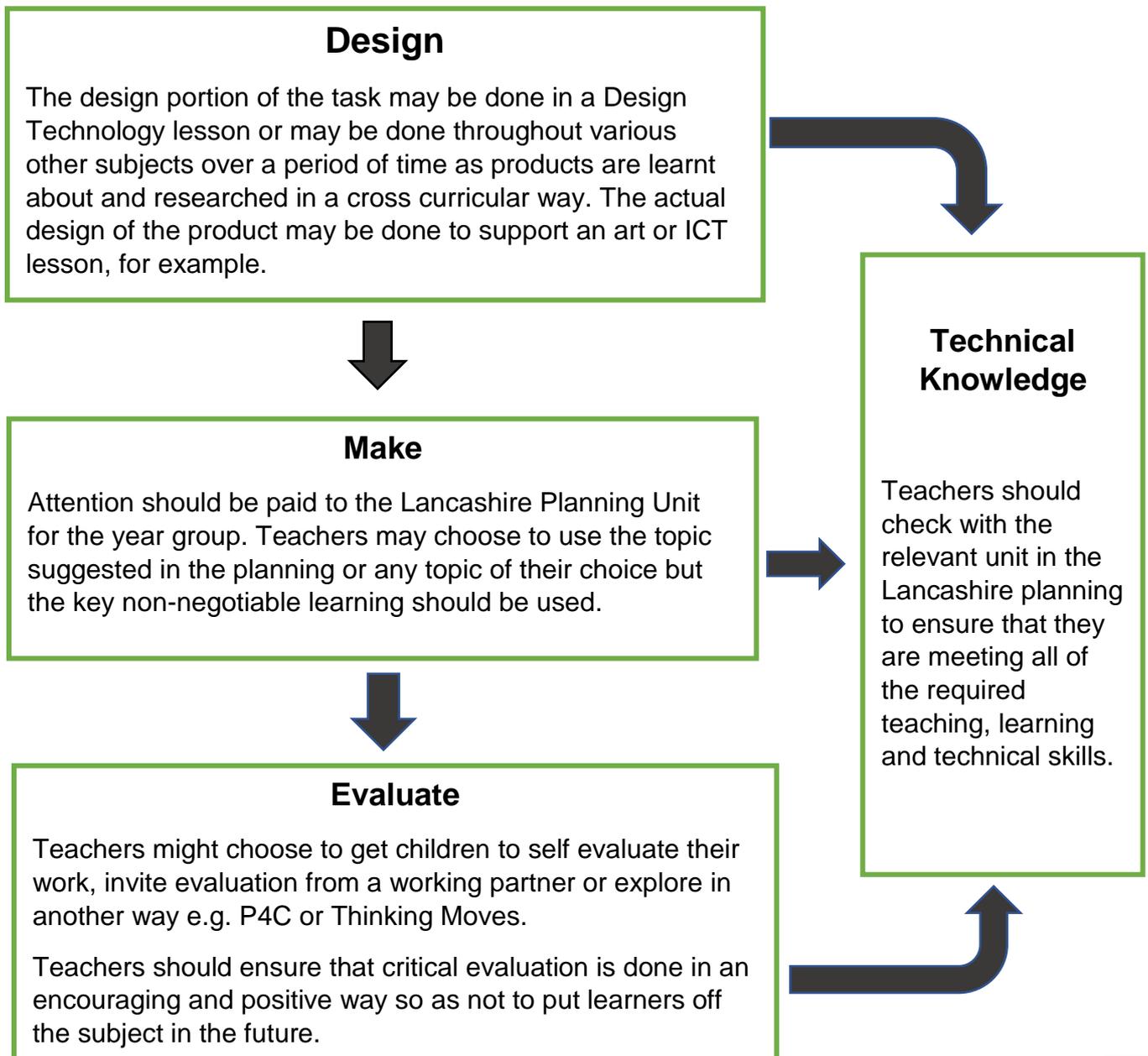
Implementation

Throughout Key Stage 1 and 2 projects should follow a Design; Make; Evaluate process with an underlying building of technical knowledge.

Some projects may be done within a condensed amount of time during a specific Design Technology lesson. Some may be spread over a cross curricular approach, for example with research being done during a history lesson, planning done during an English lesson when looking at how to write instructions, etc.

Whichever approach is taken, projects should take, on average, 8 – 12 hours per project or unit.

This is an overview of the Design; Make; Evaluate process.

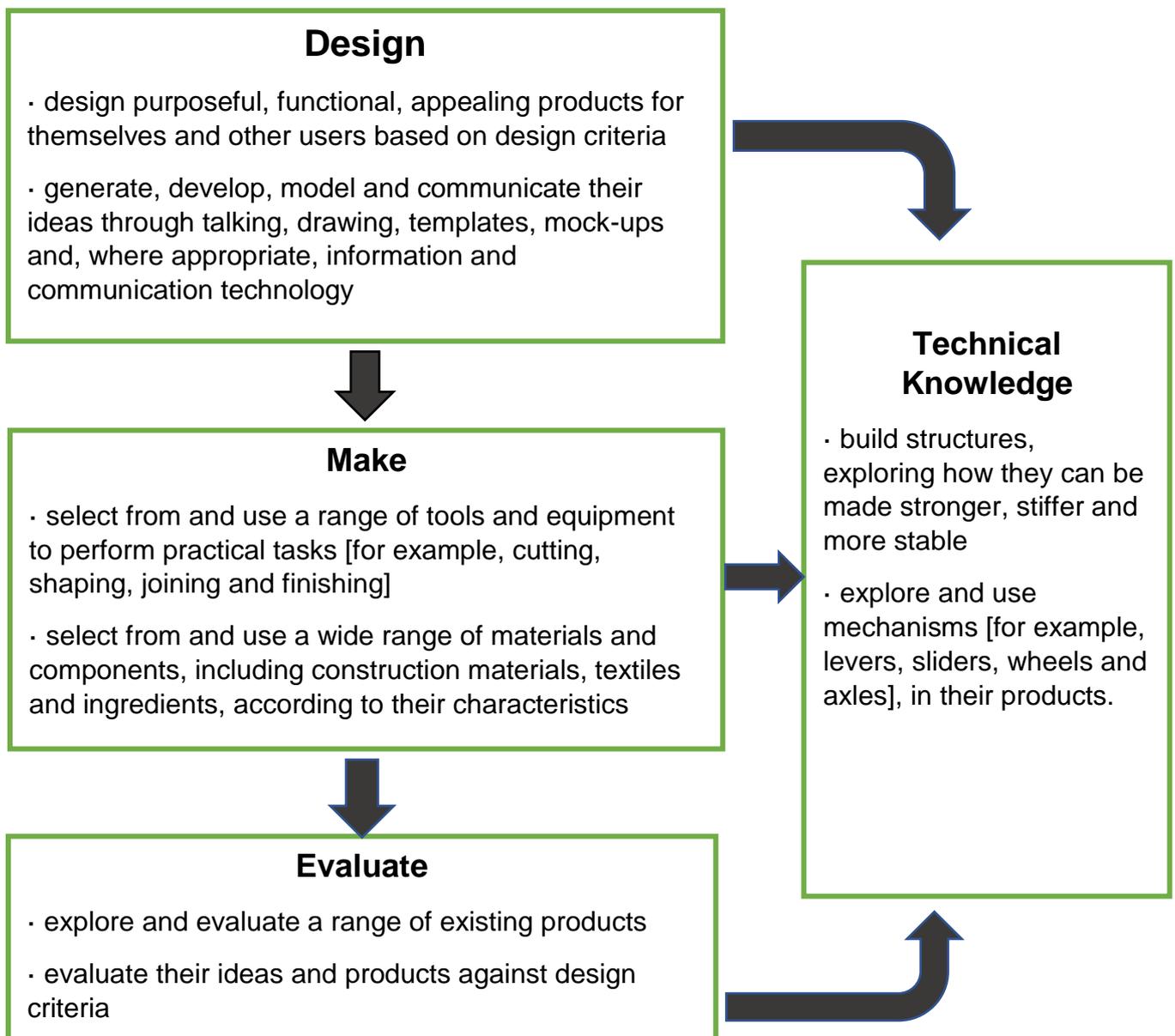




Key Stage 1

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].

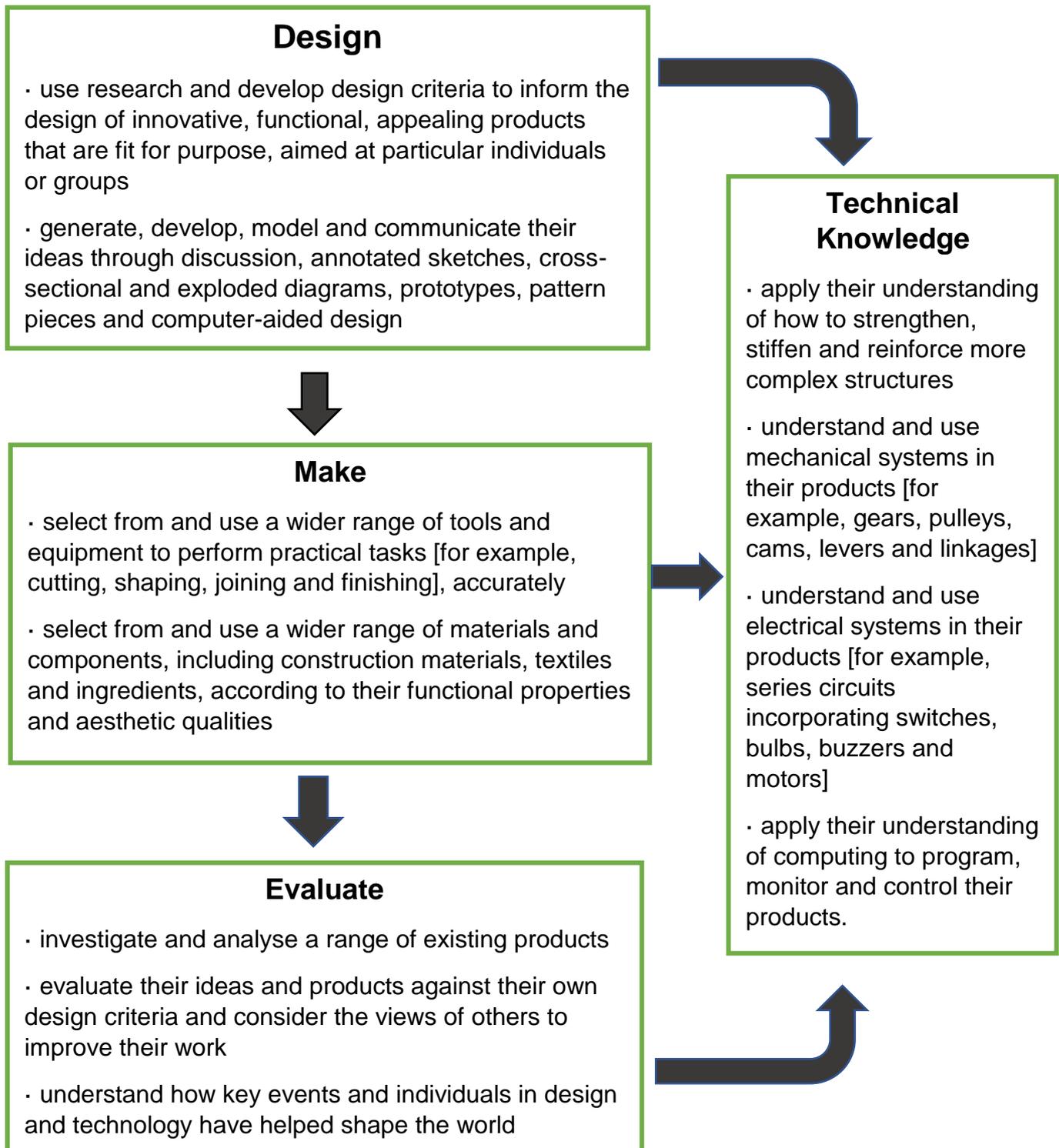




Key Stage 2

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, school, leisure, culture, enterprise, industry and the wider environment].





Cooking and Nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating.

Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity.

Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key Stage 1

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

Key Stage 2

- 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
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.



Statutory Requirements

Design Technology should be taught throughout Key Stage 1 and 2 with a natural progression of skills, knowledge and expertise. The scheme of work used should ensure that skills are built on from previous learning.

At St Leonard's School we use the Lancashire Planning Scheme. Each year of work relies on the previous year being taught as per the Lancashire Scheme in order that the skills progress in a planned and thorough way. At St Leonard's we encourage teachers to be creative and express their own individuality and interests within their teaching, so that children receive a rich education throughout their time in school. As such a teacher may decide to explore the skills and learning for Design Technology through a topic other than one on the Lancashire Planning. If a teacher chooses to take this approach then they should put their planning on the school T Drive in the Design Technology folder to support the whole school in building up a bank of varied ideas for future year groups.

Whichever topic is explored the following points are non-negotiables.

Non-Negotiables in the Teaching of Design Technology at St Leonard's School

- If exploring the unit through a topic or project not stated on the Lancashire Planning then all DT planning for covering that unit should be put in the T Drive Design Technology folder. If being done as a cross curricular activity then this should be written up as a brief overview in a Word document. As this has not previously been a requirement, this becomes a requirement from Monday 26th April 2021.
- The Design and Technology Association recommend that projects should take between 8 – 12 hours in order to plan, create and evaluate fully. This can be done as a DT lesson or with a cross curricular approach.

Following, are the non-negotiables for each year group. If your class is a mixed age class then you need to ensure coverage within your Key Stage so that all children get the opportunity to explore all skills whilst in the Key Stage.



Design Technology Non-negotiables

Key Learning Which Must Be Covered in Each Year Group

Year	Strand and Product	Lancashire Planning: Purpose of Unit	Key Learning to Cover in This Unit
Year 1	Mechanisms (Pop ups and simple levers) Product: Illustration with moving parts	To support written explanation/description	Creating a picture or card with moving parts
Year 1	Food (preparing and combining) Product: Fruit Salad	Tasty and colourful	<ul style="list-style-type: none"> • Develop a food vocabulary • Cut, peel, grate and chop • Taste test • Work safely and hygienically • Use non-standard measures e.g. cup, tablespoon • Understand the need for a varied diet
Year 1	Structures – stability and strength Product: Playground equipment	For example, to slide down	<ul style="list-style-type: none"> • Using a glue gun with supervision • Exploring how to make structures stable and strong • Marking out materials to be cut using a template • Exploring ways to join items together
Year 2	Mechanisms (wheels and axles) Product: A vehicle	To explore..... (countries or landscapes e.g. underwater, rough terrain, etc)	<ul style="list-style-type: none"> • Woodwork • Axles and wheels
Year 2	Simple dish made without heat sources Product: A salad	Tasty, colourful, appealing	<ul style="list-style-type: none"> • Develop a food vocabulary • Cut, peel, grate and chop • Taste test • Work safely and hygienically • Use non-standard measures e.g. cup, tablespoon • Understand the need for a varied diet • Group familiar food products
Year 2	Textiles – using a template, simple stitches, choice of materials Product: A Puppet	To engage younger children in the retelling of a nursery rhyme/story	<ul style="list-style-type: none"> • Cutting out shapes following templates • Joining fabric • Decorating fabric • Painting fabric



Year 3	Food (A simple dish: the eatwell plate) A simple meal using limited cooking methods/parts	To pack for a picnic	<ul style="list-style-type: none"> Looking at food that is easy to make and transport e.g. for a picnic Looking at the Eatwell Plate Learning about simple cooking techniques e.g. boiling or baking Learning about basic food preparation
Year 3	Mechanical Systems (Levers and Linkages) Product: A moving picture book	To retell a story	<ul style="list-style-type: none"> Use mechanical systems such as levers and linkages Pop up pictures and cards
Year 3	Structures – shell frame structures and strengthening A planter/ raised bed	Growing plants (for use in science)	<ul style="list-style-type: none"> Develop vocabulary related to the project. Create shell or frame structures. Strengthen frames with diagonal struts. Make structures more stable by giving them a wide base. Measure and mark square section, strip and dowel accurately to one centimetre.
Year 4	Electrical Systems Product: Circuits	A product using circuits	Designing, making and evaluating a product which uses a basic circuit
Year 4	Textiles (3D product from 2D pieces) Product: A textile passport container	To keep the passport (or other similar item) safe and stop it from getting damaged	<ul style="list-style-type: none"> Sewing fabrics using different stitches Adding fastenings and decorations Making prototypes Understanding seam allowance
Year 4	Food (A simple dish; the eatwell plate) Product: A simple meal using available ingredients, limited range of cooking methods	A shipwrecked explorer (or similar challenge)	<ul style="list-style-type: none"> Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). Follow instructions/recipes. Make healthy eating choices – use the <i>Eatwell plate</i>. Join and combine a range of ingredients. Explore seasonality of vegetables and fruit. Develop understanding of how meat/fish are reared/caught.



Year 5	Food (Food from other cultures; variety of cooking techniques) Product: An attractive food item	To be eaten at a celebration	<ul style="list-style-type: none"> • Learn about locally produced food • Learn about people/countries with excess food or not enough food • Learn about the growth and transportation of food including the global footprint of transporting food • Learn about fair trade food • Learn about food from around the world • Learn which foods are natural and which are man-made/processed
Year 5	Mechanical Systems (Gears, pulleys, cams) using a battery powered motor Product: A product using gears and powered by an electrical motor	To pull a trailer carrying 0.5kg up a 30 degree incline	<ul style="list-style-type: none"> • Exploring mechanical systems such as gears, pulleys and cams • Exploring mechanical systems such as motors
Year 5	Textiles Product: A belt with loops and pouches	To carry equipment	<ul style="list-style-type: none"> • Understanding patterns • Pinning and tacking • Joining and combining fabrics • Decorating • Making a quality product • Creating 3D products using patterns and understanding seam allowance
Year 6	Food (Health and nutrition – the eatwell plate) Product: A meal	Healthy and nutritious	<ul style="list-style-type: none"> • Work safely and hygienically • Eatwell plate • Understanding the need for a healthy diet • Planning food for a particular purpose • Choosing ingredients that work well together
Year 6	Part one: Structures Product: A framework to carry a diorama	To support a panoramic display (e.g. Blackpool illuminations)	<ul style="list-style-type: none"> • Use the correct terminology for tools materials and processes. • Use bradawl to mark hole positions. • Use hand drill to drill tight and loose fit holes. • Cut strip wood, dowel, square section wood accurately to 1mm. • Join materials using appropriate methods.



			<ul style="list-style-type: none">• Build frameworks to support mechanisms.• Stiffen and reinforce complex structures.
Year 6	Part two: Mechanical and electrical systems and computer control Product: A mechanism and lighting	To entertain visitors	Teach any skills not already in place including: <ul style="list-style-type: none">• Develop a technical vocabulary appropriate to the project.• Use mechanical systems such as cams, pulleys and gears (<i>learned in Year Five</i>).• Use electrical systems such as motors (<i>learned in Year Four</i>).• Program, monitor and control using ICT (from programming and control elements taught in computing lessons).



What Pedagogical Approaches Will Be Utilised?

Emotion Works

Emotion Works is an educational programme for emotional learning and literacy. Based around a visually supportive framework for learning and talking about emotions, the goal is to build emotional language and understanding in children and young people to help develop emotional competence and resilience. In exploring the cooking and nutrition aspects of Design Technology, EmotionWorks can be combined to work towards healthy bodies and healthy minds.

Forest Schools and Outdoor Learning

From tree climbing, to den building and whittling, outdoor learning offers a world of opportunities to extend Design Technology learning. Some of the ways in which we introduce Design Technology into our outdoor curriculum include;

- Den building
- Large scale construction
- Maintaining and repairing outdoor areas in our school environment
- Group work
- Using tools
- Small scale work such as joinery
- Planting, growing and harvesting food

Educational Visits and Visitors

We offer several educational visits in each class throughout the school. Some of these may be day trips and some may be residential trips. For all trips children get experiences and skills that they may not normally get in their day to day life. It should also be considered whether there is a Design Technology visitor that you could invite into class to enhance your lesson.

There are many trips which support Design Technology. These might include;

- Museums
- Local museums and galleries e.g. Weaver's Triangle, Gawthorpe Hall lace collection, Helmshore Mills Textiles Museum, etc
- Local manufacturers and engineers such as Veka
- Local food production companies such as Warburtons, bakers, supermarkets, farmer's markets, farm trips, the fishery, etc
- Museums and galleries that are further afield e.g. Manchester Museum of Science and Industry
- Museums on residential trips e.g. on the London, York and Edinburgh trips
- Den building activities



Philosophy for Children and Thinking Moves

Philosophy for Children gives children a way to explore their own thoughts and feelings on different subjects and questions. This teaches children the 4Cs of being Caring, Critical, Creative and Collaborative. This approach can be used in class or in intervention to explore any question or concept, putting the child and their thoughts at the centre with the adult as a facilitator – helping children to explore then reach their own conclusions in a well thought out way.

Important dimensions of p4c which support development and progress in Design Technology include thinking *with* others (collaborative thinking), thinking *of* others (caring thinking), thinking about thinking (metacognition) and thinking about what matters to oneself and others (reflection).

P4C can also be used to explore inventions, food production and sustainability, ethical farming, ethical production (Fair Trade, air miles, etc) and is a great tool to support reflective learning as different products or inventions are analysed and discussed.

Teachers may decide to approach a unit as a collection of weekly P4C/Thinking Moves lessons as they explore a particular learning objective, depending on their aims and interests.

Thinking Moves

Thinking Moves teaches children the true power of their thinking skills. This approach provides a toolkit of 26 thinking skills which children can use in all areas of their school and home life. They can be used to fully explore any concept, topic or event. The possibilities for use of Thinking Moves in Design Technology are endless however here are some brief starter ideas.

AHEAD	Think ahead and decide what you would like to make
BACK	Think back – what went wrong?
CONNECT	Can you think of any ... (e.g. things with pulleys). That you have seen in real life and find a way to use that knowledge in your own design?
DIVIDE	How are these two designs different? How does that make them work differently?
EXPLAIN	Can you explain in your initial planning what you are going to make?
FORMULATE	Can you think of the best approach to making your product? Can you come up with a plan?
GROUP	Let's group these foods into the different areas on the Eat Well Plate. Let's group these household items into mechanical and electrical groups.
HEADLINE	If you were going to sell your product how would you advertise it? Can you come up with a one line big sell for your poster?
INFER	Oh no! That broke when you did ... What can you infer about the design from that?
JUSTIFY	Can you tell me why you have decided to use ... (e.g. glue, Velcro, masking tape, etc) in your design instead of ...?
KEYWORD	What were the keywords in what we learnt? (technical knowledge)



LISTEN/LOOK	Look carefully at your design. Do you want to change anything before you make it? Look carefully at how is made. Listen to this information about..... then tell me what you remember.
MAINTAIN	When working as a group – which parts/approach do you feel strongly should be used?
NEGATE	Can you think of a reason why you shouldn't use ...
ORDER	Plan out your approach to this task. Let's put the cooking instructions in the right order. Can we order these inventions by most to least useful?
PICTURE	Picture a time when you have seen a before Picture what your product is going to look like before writing down your plan
QUESTION	Research
RESPOND	Question a friend about their design Can you sit in the hot seat for a question and answer session about your design/plan? Can you question your own plan and respond to anything that has gone wrong with some changes?
SIZE	How big are you going to make it? How much do you need? How long will it take to plan/make/dry?
TEST	Make a prototype to test out your idea
USE	What tools will you need to use? What skills and learning did you use? How many different uses can you think of for this
VARY	How would you change your design next time? Would it work differently if you joined the pieces using ...?
WEIGH UP	Weigh up all of the resources before deciding which to use Weigh up the pros and cons of buying locally produced food/ organic food/growing your own
eXEMPLIFY	Can you give an example of toys that use cogs? Can you give an example of a healthy meal? Can you give some examples of things made out of wool?
YIELD	Do you think that you did something wrong in ... stage of your design? Do you think it would have been better to use ...?



ZOOM IN/OUT

Zoom Out – How could this invention be used to help the world?

Zoom In – let's take this computer keyboard apart and find out what the bits inside look like



Appendix 1: Overview of the Curriculum and Progression of Skills – Key Stage 1 and 2

Design Technology Units KS1 – KS2

Year	Cycle	Lancashire Planning Topic	Strand and Product	Lancashire Planning: Purpose of Unit	Key Learning to Cover in This Unit	Basic Resources
Year 1	B	Fire! Fire!	Mechanisms (Pop ups and simple levers) Product: Illustration with moving parts	To support written explanation/ description	Creating a picture or card with moving parts	Hole punch Treasury tags Split pins Card levers and sliders
Year 1	B	Growth and Green Fingers	Food (preparing and combining) Product: Fruit Salad	Tasty and colourful	<ul style="list-style-type: none"> • Develop a food vocabulary • Cut, peel, grate and chop • Taste test • Work safely and hygienically • Use non-standard measures e.g. cup, tablespoon • Understand the need for a varied diet 	Chopping boards Knives Potato peelers Grater Measuring spoons and cups Kebab sticks
Year 1	B	The Great Outdoors	Structures – stability and strength Product: Playground equipment	For example, to slide down	<ul style="list-style-type: none"> • Using a glue gun with supervision • Exploring how to make structures stable and strong • Marking out materials to 	Glue sticks PVA Different types of tape Glue gun and refills Craft straws Wood Table vice Hacksaw Sandpaper



					<ul style="list-style-type: none"> be cut using a template Exploring ways to join items together 	Junk modelling resources Graph paper
Year 1	NA	Robots				
Year 2	A	Explorers	Mechanisms (wheels and axles) Product: A vehicle	To explore..... (countries or landscapes e.g. underwater, rough terrain, etc)	<ul style="list-style-type: none"> Woodwork Axles and wheels 	Tapes and glues Wheels Cotton reels Dowel Hacksaw Wood Table vice Hacksaw Sandpaper Cardboard Graph paper Junk modelling resources
Year 2	A	The Farm Shop (Eatwell plate)	Simple dish made without heat sources Product: A salad	Tasty, colourful, appealing	<ul style="list-style-type: none"> Develop a food vocabulary Cut, peel, grate and chop Taste test Work safely and hygienically Use non-standard measures e.g. cup, tablespoon Understand the need for a varied diet Group familiar food products 	Eatwell plate picture Chopping boards Knives Potato peelers Grater Measuring spoons and cups Kebab sticks
Year 2	A	Wind in the Willows	Textiles – using a template,	To engage younger children in the retelling of a	<ul style="list-style-type: none"> Cutting out shapes 	Buttons Beads Sequins



			<p>simple stitches, choice of materials</p> <p>Product: A Puppet</p>	nursery rhyme/story	<p>following templates</p> <ul style="list-style-type: none"> • Joining fabric • Decorating fabric • Painting fabric 	<p>Ribbon</p> <p>Fabric paint</p> <p>Felt</p> <p>Fabric</p> <p>Printing or batik equipment</p> <p>Scissors</p> <p>Glue</p> <p>Needles and pins</p> <p>Thread</p> <p>Wool</p> <p>Thimbles</p>
Year 3	B	Healthy Humans	<p>Food (A simple dish: the eatwell plate)</p> <p>A simple meal using limited cooking methods/parts</p>	To pack for a picnic	<ul style="list-style-type: none"> • Looking at food that is easy to make and transport e.g. for a picnic • Looking at the Eatwell Plate • Learning about simple cooking techniques e.g. boiling or baking • Learning about basic food preparation 	<p>Chopping boards</p> <p>Knives</p> <p>Potato peelers</p> <p>Grater</p> <p>Measuring jugs</p> <p>Pans</p> <p>Table top stove</p> <p>Cook book or recipe</p>
Year 3	B	The Iron Man	<p>Mechanical Systems (Levers and Linkages)</p> <p>Product: A moving picture book</p>	To retell a story	<ul style="list-style-type: none"> • Use mechanical systems such as levers and linkages • Pop up pictures and cards 	<p>Lolly sticks</p> <p>Glues and tapes</p> <p>Card</p> <p>Split pins</p> <p>Craft straws</p> <p>Junk modelling resources</p> <p>Graph paper</p>
Year 3	B	How Does Your	Structures – shell frame	Growing plants (for use in science)	<ul style="list-style-type: none"> • Develop vocabulary 	Dowel Rulers



		Garden Grow?	structures and strengthening A planter/ raised bed		<p>related to the project.</p> <ul style="list-style-type: none"> • Create shell or frame structures. • Strengthen frames with diagonal struts. • Make structures more stable by giving them a wide base. • Measure and mark square section, strip and dowel accurately to one centimetre. 	Wood Hacksaw Vice Sandpaper Glues and tapes Hammer and nails Graph paper
Year 4	A	Sparks May Fly	Electrical Systems Product: Circuits	A product using circuits	Designing, making and evaluating a product which uses a basic circuit	Switches Buzzers Bulbs Circuits and circuit breakers
Year 4	A	Passport to Europe	Textiles (3D product from 2D pieces) Product: A textile passport container	To keep the passport safe and stop it from getting damaged	<ul style="list-style-type: none"> • Sewing fabrics using different stitches • Adding fastenings and decorations • Making prototypes • Understanding seam allowance 	Buttons Beads Sequins Ribbon Fabric paint Felt Fabric Printing or batik equipment Scissors Glue Needles and pins Thread Wool Thimbles



						J cloths
Year 4	A	Hunted	Food (A simple dish; the eatwell plate) Product: A simple meal using available ingredients, limited range of cooking methods	A shipwrecked explorer	<ul style="list-style-type: none">• Develop sensory vocabulary/ knowledge using, smell, taste, texture and feel.• Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury).• Follow instructions/ recipes.• Make healthy eating choices – use the <i>Eatwell plate</i>.• Join and combine a range of ingredients.• Explore seasonality of vegetables and fruit.• Develop understanding of how meat/fish are reared/caught.	Selection of cooking tools and implements to look at – peeler, masher, knives, pan, chopping board Recipe books or cards Cooked root vegetables if food tasting



Year 5	B	Food Glorious Food!	Food (Food from other cultures; variety of cooking techniques) Product: An attractive food item	To be eaten at a celebration	<ul style="list-style-type: none"> • Learn about locally produced food • Learn about people/countries with excess food or not enough food • Learn about the growth and transportation of food including the global footprint of transporting food • Learn about fair trade food • Learn about food from around the world • Learn which foods are natural and which are man-made/processed 	Photos of celebration foods from around the world Photos of food which can be locally sourced in Lancashire Samples of food if food tasting Cooking equipment if cooking
Year 5	B	Inventors and Inventions	Mechanical Systems (Gears, pulleys, cams) using a battery powered motor Product: A product using gears and	To pull a trailer carrying 0.5kg up a 30 degree incline	<ul style="list-style-type: none"> • Exploring mechanical systems such as gears, pulleys and cams • Exploring mechanical systems such as motors 	Gears and pulleys Cogs and cog board Simple motor and batteries Elastic bands Mechanical construction kits



			powered by an electrical motor			Push, pull and friction toys
Year 5	B	Amazon Adventure	Textiles Product: A belt with loops and pouches	To carry equipment	<ul style="list-style-type: none"> Understanding patterns Pinning and tacking Joining and combining fabrics Decorating Making a quality product Creating 3D products using patterns and understanding seam allowance 	Tool belt as example Buttons Beads Sequins Ribbon Fabric paint Felt Fabric Printing or batik equipment Scissors Glue Needles and pins Thread Wool Thimbles
Year 6	A	Heroes and Villains	Food (Health and nutrition – the eatwell plate) Product: A meal	Healthy and nutritious	<ul style="list-style-type: none"> Work safely and hygienically Eatwell plate Understanding the need for a healthy diet Planning food for a particular purpose Choosing ingredients that work well together 	Research on Jamie Oliver and school meals Eatwell plate diagram Healthy food recipe books Weighing scales Cooking equipment (see previous units)
Year 6	A	Oh! I do like to be beside the seaside Part One	Part one: Structures Product: A framework to carry a diorama	To support a panoramic display (Blackpool illuminations)	<ul style="list-style-type: none"> Use the correct terminology for tools materials and processes. 	Bradawl Hand drill Wood Dowel Square section wood Hacksaw



					<ul style="list-style-type: none"> • Use bradawl to mark hole positions. • Use hand drill to drill tight and loose fit holes. • Cut strip wood, dowel, square section wood accurately to 1mm. • Join materials using appropriate methods. • Build frameworks to support mechanisms. • Stiffen and reinforce complex structures. 	<p>Vice Sandpaper Glues and tapes Pictures of storage for large structures Pictures of Blackpool illuminations Graph paper</p>
Year 6	A	<p>Oh! I do like to be beside the seaside</p> <p>Part Two</p>	<p>Part two: Mechanical and electrical systems and computer control</p> <p>Product: A mechanism and lighting</p>	To illustrate a nursery rhyme/entertain visitors	<p>Teach any skills not already in place including:</p> <ul style="list-style-type: none"> • Develop a technical vocabulary appropriate to the project. • Use mechanical systems such as cams, pulleys and gears (<i>learned in Year Five</i>). 	<p>Materials to be personalised and ordered if necessary in order to create final products</p>



					<ul style="list-style-type: none"> • Use electrical systems such as motors (<i>learned in Year Four</i>). • Program, monitor and control using ICT (from programming and control elements taught in computing lessons). 	
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Design Technology 2 Year Timetable

Term	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Autumn 1		Y3 - 4 (A) Sparks May Fly	
Autumn 2	Y1-2 (B) Fire Fire!	Y3-4 (B) Healthy Humans	Y5-6 (B) Food Glorious Food!
Spring 1	Y1 -2 (A) Explorers		Y5-6 (A) Heroes and Villains
Spring 2	Y1-2 (B) Growth and Green Fingers Y1-2 (A) The Farm Shop	Y3-4 (B) The Iron Man Y3-4 (A) Passport to Europe	Y5-6 (B) Inventors and Inventions
Summer 1	Y1 – 2 (B) The Great Outdoors Y1-2 (A) Wind in the Willows Y1 (Additional subject) Robots		Y5-6 (B) Amazon Adventure Y5-6 (A) Oh I Do Like To Be Beside the Seaside
Summer 2		Y3-4 (B) How Does Your Garden Grow Y3-4 (A) Hunted	
Additional Topics			Year 5 spring 1: 3D printing linked to computing (space topic) Year 5 summer 1: seasonal food (linked to food sources in geography)



			Year 5 summer 2: structures Year 6 autumn 1: 3D drawing linked to computing (ancient Greece topic) Year 6 spring 1: periscopes (linked to light in science) Year 6 summer 2: global food (linked to health in science and global trade in geography)
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Appendix 2: Design Technology in the EYFS – Development Matters 2020

Within the nursery and reception classes Design Technology is present across the curriculum. In all EYFS classrooms the foundational skills of planning, preparing, creating and evaluating are explored through enhanced and continuous provision. The areas in which these skills are most often seen are; construction, craft, playdough, small world and outdoors. Additional focussed activities allow for more focused teaching of the skills, including using tools for cooking and using woodwork tools.

The areas of the curriculum which are most relevant to Design Technology are;

Characteristics of Effective Learning

Playing and Exploring - Children will be learning to:
Realise that their actions have an effect on the world, so they want to keep repeating them.
Make choices and explore different resources and materials.
Plan and think ahead about how they will explore or play with objects.
Make independent choices.
Do things independently that they have been previously taught.
Respond to new experiences that you bring to their attention.
Active Learning- Children will be learning to:
Show goal-directed behaviour.
Use a range of strategies to reach a goal they have set themselves.
Begin to correct their mistakes themselves. For example, instead of using increasing force to push a puzzle piece into the slot, they try another piece to see if it will fit.
Keep on trying when things are difficult.
Creating and Thinking Critically- Children will be learning to
Sort materials. For example, at tidy-up time, children know how to put different construction materials in separate baskets.
Review their progress as they try to achieve a goal. Check how well they are doing. Solve real problems.
Know more, so feel confident about coming up with their own ideas. Make more links between those ideas.
Concentrate on achieving something that's important to them. They are increasingly able to control their attention and ignore distractions.

Area of Development Matters	Age 3 – 4 Years	Age 4 – 5 Years
	Choose the right resources to carry out their own plan. For example, choosing a	Develop their small motor skills so that they can use a



Physical Development	<p>spade to enlarge a small hole they dug with a trowel.</p> <p>Use one-handed tools and equipment, for example, making snips in paper with scissors.</p> <p>Collaborate with others to manage large items, such as moving a long plank safely, carrying large hollow blocks.</p> <p>Make healthy choices about food</p>	<p>range of tools competently, safely and confidently.</p> <p>Know and talk about the different factors that support their overall health and wellbeing - healthy eating</p>
Mathematics	<p>Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p> <p>Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.</p> <p>Combine shapes to make new ones - an arch, a bigger triangle etc.</p>	<p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p> <p>Compose and decompose shapes so that children recognise a shape can have other shapes <i>within</i> it, just as numbers can.</p> <p>Compare length, weight and capacity.</p>
Expressive Arts and Design	<p>Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</p> <p>Explore different materials freely, in order to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>Join different materials and explore different textures.</p>	<p>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively sharing ideas, resources and skills.</p>



Appendix 3: Roles and Responsibilities

Governors

To ensure that they are aware of the Design Technology policy and ask for updates and involvement as required.

Our Design Technology specialist knowledge/expert governor is Mark Nield.

Head Teacher

- To report to Governors as required or ask the Subject Co-Ordinator to do so.
- To support staff and Subject Co-Ordinator as required
- To allocate, in conjunction with Governors, the annual DT budget and co-sign any orders of resources.
- To ensure that the Design Technology policy covers all necessary areas and is in line with school priorities and ethos.
- To ensure that Design Technology has an ongoing development plan.
- To consider, and authorise if accepted, any requested high risk activities that a teacher would like to undertake as a DT project.

Subject Co-Ordinator

A subject co-ordinator should provide leadership and direction for their subject, ensure that it complies with National Curriculum requirements, meets school and subject aims and objectives and that it is effectively managed and organised.

The headteacher and governors have overall responsibility for school leadership and management. However, subject co-ordinators should also play a significant role in the development of school policy in their subject area. They should have a clear understanding of standards in their subject area. They should understand how their subject contributes to school priorities and to the overall education and achievement of all pupils.

The role of the co-ordinator is likely to cover:

- School Development Planning.
- Subject Development.
- Resource Management.
- Monitoring and Evaluation of the Curriculum, Teaching and Standards.
- Supporting Staff.
- Organising Professional Development.

A subject co-ordinator plays a key role in supporting, guiding and motivating teachers of the subject and other adults working in the school. The degree to which a subject co-ordinator is involved in monitoring teaching will depend on school policy and may well be influenced by the size of the school. Observing in lessons can be most informative but it is also a highly sensitive area and it is essential that there is a clear understanding of the context and purpose of lesson



observations by subject co-ordinators in order to avoid unnecessary anxiety, confusion and misunderstanding.

Subject co-ordinators, including those who are not members of the senior management team, may need to observe lessons or aspects of lessons as part of the evaluation of their subject or area of responsibility. This should be to identify strengths and priorities for their subject and NOT to judge individual teacher effectiveness although it may lead to providing individuals with advice and support. It is the responsibility of the Senior Management Team to observe and offer feedback on the quality of teaching provided by individual teachers.

The Core Purpose of the Subject Co-ordinator in the Primary School is to provide professional leadership for a subject within the school in order to secure high quality learning, develop and support effective teaching, make the most effective use of resources and maintain and improve standards of achievement for all pupils.

The Range of Tasks Undertaken by the Subject Co-ordinator

School Development Planning.

- Leading the development of the subject within school.
- Keeping up-to-date with developments in the subject at local and national level.
- Ensuring that the needs of teaching the subject are represented within meetings in school and in the School Development Plan.
- Ensuring that actions described in the School Development Plan and/or Action Plan are implemented.

Subject Development.

- Leading the development of subject policy.
- Leading the review of subject policy.
- Leading the development of a subject scheme of work.
- Advising and liaising on how ICT can support the subject.
- Ensuring that cross-curricular themes are included in the Scheme of Work.
- Leading the review of a subject Scheme of Work.
- Representing policies and reviews to interested parties such as the senior management team and the governing body.

Resource Management.

- Auditing resources within the subject.
- Organising resources, storage and upkeep.
- Organising resource purchase and loan.
- Managing the subject budget.



Monitoring and Evaluation of the Curriculum, Teaching and Standards.

- Ensuring that there is progression and continuity within the subject across the school.
- Liaising with the nursery and secondary schools re subject continuity.
- Ensuring that the school follows statutory requirements in the subject area.
- Ensuring that purchases are effectively used to improve teaching and learning.
- Leading the staff in developing high standards within the subject area.

Supporting Staff.

- Ensuring that the school follows appropriate external advice, guidance and consultancy.
- Supporting staff in their teaching of the subject.
- Supporting staff in their teaching of the subject to pupils of all abilities.

Organising Professional Development.

- Organising professional development within the school.

School Development Planning:

Tasks	Strategies
Leading the development of the subject within school.	<ul style="list-style-type: none"> • Leading discussions during staff meetings. • Discussing and reporting on the development of the subject with senior staff. • Undertaking clearly defined development activities within the school. • Leading subject development on Inset days.
Keeping up-to-date with developments in the subject at local and national level.	<ul style="list-style-type: none"> • Professional reading. • Attending local meetings and briefing sessions. • Maintaining contact with advisers and advisory teachers. • Attending Inset. • Attending subject conferences. • Attending cluster meetings.



<p>Ensuring that the needs of teaching the subject are represented within meetings in school and in the School Development Plan.</p>	<ul style="list-style-type: none"> • Preparing reports for the SMT. • Preparing reports for the governing body. • Attending meetings of the SMT as required. • Ensuring that the subject features appropriately in the SDP/Action Plan.
<p>Ensuring that actions described in the School Development Plan and/or Action Plan are implemented.</p>	<ul style="list-style-type: none"> • Ensuring that there are agreed timescales within the SDP/Action Plan. • Ensuring that there is no slippage to SDP/Action Plan priorities. • Reviewing progress against the SDP/Action Plan. • Proposing amendments and alternatives to the SD/Action Plan where appropriate.

Subject Development:

Task	Strategies
<p>Leading the development of subject policy.</p>	<ul style="list-style-type: none"> • Drafting a policy. • Consulting staff and governors on the policy.
<p>Leading the review of subject policy.</p>	<ul style="list-style-type: none"> • Agreeing timescales, criteria and process for the review. • Leading staff discussions during the review. • Presenting review findings. • Formalising suggestions for further actions resulting from the review.
<p>Leading the development of a subject scheme of work.</p>	<ul style="list-style-type: none"> • Raising staff awareness of the advice, materials and resources available to support the scheme of work. • Establishing what is already in existence on which a scheme of work can be built. • Ensuring that the Nation Curriculum requirements are followed. • Ensuring that the Early Learning Goals are in place in the Foundation Stage.



	<ul style="list-style-type: none"> • Establishing links with other subjects. • Promoting staff discussion of issues within the scheme of work. • Discussions with the SMT. • Discussion with advisory staff.
Advising and liaising on how ICT can support the subject.	<ul style="list-style-type: none"> • Liaise with ICT co-ordinator on potential use. • Keep up to date on available software. • Monitor lesson planning.
Ensuring that cross-curricular themes are included in the Scheme of Work.	<ul style="list-style-type: none"> • Lead formal and informal discussions with members of staff. • Monitor lesson planning.
Leading the review of a subject Scheme of Work.	<ul style="list-style-type: none"> • Agreeing timescales, criteria and process for the review. • Leading staff discussions during the review. • Presenting review findings to staff. • Formalising suggestions for further actions resulting from the review. • Establishing the changes resulting from the review.
Representing policies and reviews to interested parties such as the senior management team and the governing body.	<ul style="list-style-type: none"> • Organise a timescale for presentations linked to planned development work. • Present information in an appropriate format to SMT and governing body.

Resource Management:

Task	Strategies
Auditing resources within the subject.	<ul style="list-style-type: none"> • Ensuring that existing resources are documented. • Examine areas of duplication and shortfall compared to the scheme of work.



	<ul style="list-style-type: none"> • Consider ongoing costs, such as the use of consumable texts, with other ways of working. • Make recommendations regarding term to term spending. • Make recommendations for year to year spending.
Organising resources, storage and upkeep.	<ul style="list-style-type: none"> • Ensure that audited resources are documented against the scheme of work and published for staff. • Ensure that resources are stored in a way, which is conducive to use. • Establish a system for stock maintenance and replenishment.
Organising resource purchase and loan.	<ul style="list-style-type: none"> • Ensure that resources are purchased according to scheme of work priorities. • Consider value for money as a purchase factor. • Identify sources of loan materials for staff. • Ensure that staff know how to access/order loan materials.
Managing the subject budget.	<ul style="list-style-type: none"> • Ensure that appropriate ordering procedures are in place. • Ensure that necessary resource development is costed and included in the school development plan/school budget. • Maintain records of transactions within the subject budget cost centre.

Monitoring and Evaluation of the Curriculum, Teaching and Standards:

Task	Strategies
Ensuring that there is progression and continuity within the subject across the school.	<ul style="list-style-type: none"> • Scrutiny of medium term plans. • Scrutiny of samples of pupils' work. • Lesson observations. • Informal and formal discussions with teachers. • Discussions with pupils. • Modify provision if required.



Liasing with nursery and secondary schools re subject continuity.	<ul style="list-style-type: none"> • Visits to feeder schools. • Visits by staff from feeder schools. • Information on pupil records.
Ensuring that the school follows statutory requirements and school policies in the subject area.	<ul style="list-style-type: none"> • Ensure that the allocated time for the subject area is used for teaching and learning. • Scrutiny of pupil work. • Lesson observations. • Scrutiny of teachers' planning.
Ensuring that purchases are effectively used.	<ul style="list-style-type: none"> • Check planning for use of resources. • Lesson observation. • Formal and informal staff discussions.
Leading the staff in developing high standards within the subject area.	<ul style="list-style-type: none"> • Scrutiny of pupils' work. • Lesson observation. • Scrutiny of planning. • Analysis and reporting of SAT results. • Analysis and reporting of other assessment results. • Formal and informal staff discussions.

Supporting Staff:

Tasks	Strategies
Supporting staff in their teaching of the subject.	<ul style="list-style-type: none"> • Formal and informal discussions with staff. • Lesson observations and feedback. • Feedback from courses. • Feedback from scrutiny of teachers' planning and pupils' work. • Feedback from analysis of SATs and other assessment data.
Supporting staff in their teaching of the subject to pupils of all abilities.	<ul style="list-style-type: none"> • Lesson observations. • Liaison with SENCO. • Discussion of grouping arrangements. • Targeted setting of groups of pupils. • Development of higher order learning skills and opportunities for higher attaining pupils.

Organising Professional Development:



Tasks	Strategies
Organising professional development within the school.	<ul style="list-style-type: none"> • Identify whole staff training needs. • Lead staff meeting sessions. • Lead Inset day sessions. • Identify individual staff training needs. • Liaise with staff development co-ordinator re staff training needs in the subject area. • Identify opportunities to share good practice.

It is for the school management team, within the overall terms of the School Development Plan, to make clear the relative priority of development for each subject. Individual subjects will have different priorities at different times. The co-ordinator may wish to influence this but must work with colleagues in the context of whole school development.

Teaching Staff

- To ensure Design Technology is being taught throughout the year.
- To ensure that they meet all non-negotiables in this policy document.
- To ensure that they have all of the resources necessary to undertake design tasks in order to cover all technical knowledge requirements for each unit.
- To order or ask the subject co-ordinator to order all resources needed for projects (after checking that there is spare budget for the year to do so).
- To ensure that all risk assessments are done as required.
- To gather evidence from each child or as a whole class throughout the year. This can be done in topic books or in a floor book and is down to each teacher's personal preference.
- To put any non-Lancashire planning on the T Drive in the Design Technology folder.

Appendix 4: SEND, Gifted and Talented

As with all children, our aim at St Leonard's is to have Quality First teaching. This means that all children should be accessing our Design Technology units within the whole class teaching.

For some SEND children this may mean an additional risk assessment, specialist equipment, additional communication support and one-to-one support.

Where relevant learning for all pupils should be differentiated by expectation, support, questioning and child-led end product.

For any child who is found to be gifted and talented in any of the Design Technology areas, this should be encouraged with building on skills and learning, along with additional challenges to self reflect and extend.