

St John's Progression Document

Our school drivers are: SMSC (Spiritual, Moral, Social and Cultural Capital), Learning Behaviours and Possibilities

Subject: Design Technology



Purpose: Design and 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.

The National Curriculum for DT aims to ensure 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.

Threshold concepts:

			Technical Structures Mechanisms Textiles Electrical systems Digital World
Design	Make	Evaluate	

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Planning process - how am I going to make this?	Use skills I have learnt to make a product	Does my design work?	Cooking and Nutrition
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How learning starts in the early years:

A combination of child-initiated and adult-directed activities will give pupils the opportunities to learn to:

- Explore and experiment with different materials and construction methods through play and guided making experiences.
- Develop curiosity about how things work and how materials can be joined, shaped, and combined for different purposes.
- Use tools and equipment safely and with control to cut, shape, join, and build.
- Make choices about materials and methods to create and adapt their own designs.
- Talk about their ideas and creations, explaining what they have made and how they might improve it.
- Begin to understand that products are made for a purpose and designed to meet a need.

Construction & Making: Children are introduced to a range of construction materials such as blocks, recycled boxes, card, wood, and natural resources. They explore how materials can be joined, stacked, and balanced. Through adult-led sessions, they learn basic techniques such as folding, cutting, gluing, taping, and slotting. These skills are then reinforced through continuous provision, where children can design and build their own models, enclosures, and structures.

Tool Use (Busy Bench / Workshop Area): Children are taught to handle tools safely and confidently. They learn how to use scissors, hole punches, hammers, screwdrivers, and saws (with supervision) to manipulate and join materials. They explore how to fix and connect materials using nails, screws, and bolts. Adults model correct tool use and encourage independence and problem-solving as skills develop.

Mechanisms & Movement: Children explore how things move through play with wheeled toys, pulleys, wind-up toys, and simple linkages. They are introduced to the concept of parts working together, such as wheels and axles, and experiment with creating their own moving models using card, split pins, and boxes.

Food Technology: Children are introduced to cooking and food preparation through hands-on sensory experiences. They explore the smell, texture, and taste of ingredients, and learn to prepare simple recipes such as fruit kebabs, sandwiches, or biscuits. Safe tool use (e.g. cutting with knives, peeling, grating) is modelled and practised. They begin to understand where food comes from and talk about healthy choices.



Textiles & Materials: Children handle and explore a range of materials such as fabrics, threads, and ribbons. They develop fine motor control through weaving, threading, tying, and simple sewing activities. They are introduced to joining fabrics using glue, staples, or simple stitches and begin to understand how textiles can be used to make and decorate objects.

Designing & Evaluating: Children are encouraged to talk about their ideas before making, discussing what they want to create and what materials they might need. After making, they reflect on what worked well and what could be improved. Adults model vocabulary linked to design and evaluation, helping children develop confidence in explaining their thinking.

Inspiration & Real-World Links: Children explore products and objects in their environment, talking about their purpose and how they are made. They are introduced to simple examples of design and invention in everyday life, such as vehicles, clothing fastenings, or playground equipment, helping them connect their own creations to the wider world.

	Key Stage One		Key Stage Two			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Breath Of Study (NC Ref) Scheme to support planning: Kapow Lesson Plans	Structures - Stable structures Mechanisms - making a moving story book Textiles - Puppets	Cooking and nutrition - Balanced diet Structures - Baby Bear's chair Mechanisms - Making a moving	Structures: Constructing a castle Textiles: Cross-stitch and applique (cushions)	Cooking and nutrition: Adapting a recipe Electrical systems: Torches Mechanical systems: Making a	Textiles: Stuffed toys Electrical systems: Doodlers Mechanical systems: Pop-up book	Digital World: Navigating the world Electrical systems: Steady hand game Cooking and nutrition: Come dine with me (SATs week)

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		monster	Digital world: Wearable technology	slingshot car		project) Structures: Playgrounds
Knowledge and Understanding Kapow skills and knowledge progression	Threshold Concept: Design					
	Stable Structures Thinking about what others might want from a design. Beginning to recognise how products and designs in the world around us solve certain needs. Considering who they are designing for – identifying the user. Stating what they intend to make and why – identifying the purpose. Talking about ideas, with purpose and user in	Balanced Diet Designing three wrap ideas. Baby Bear's chair Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects. Moving monster Creating a class design criteria for a moving monster.	Constructing a castle Designing a castle with key features to appeal to a specific person/purpose. Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. Designing and/or decorating a castle tower on CAD software	Adapting a recipe Designing a biscuit within a given budget. Conducting market research. Torches Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. Slingshot car Designing a shape that reduces air resistance.	Stuffed toys Designing a stuffed toy, considering the main component shapes required and creating an appropriate template. Considering the proportions of individual components. Doodlers Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product.	Navigating the world Writing a design brief from information submitted by a client. Developing design criteria to fulfil the client's request. Considering and suggesting additional functions for my navigation tool. Developing a product idea through annotated sketches. Placing and manoeuvring 3D objects, using CAD. Changing the properties of, or combining one or



	mind. Talking about existing products when generating ideas. Using basic drawing skills to communicate ideas. Moving Story Book Explaining how to adapt mechanisms, using bridges or guides to control the movement. Designing a moving story book for a given audience. Puppets Using a template to create a design for a puppet.	Designing a moving monster for a specific audience in accordance with a design criteria.	Cross Stitch and applique Designing and making a template from an existing cushion and applying individual design criteria. Wearable Technology Problem solving by suggesting which features on a Micro:bit might be useful and justifying my ideas. Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. Developing design ideas through annotated sketches to create a product concept.	Drawing a net to create a structure from. Choosing shapes that increase or decrease speed as a result of air resistance. Personalising a design	Developing design criteria based on findings from investigating existing products. Developing design criteria that clarifies the target user. Pop-up book Designing a pop-up book which uses a mixture of structures and mechanisms. Naming each mechanism, input and output accurately. Storyboarding ideas for a book.	more 3D objects, using CAD. Steady hand game Designing a steady hand game - identifying and naming the components required. Drawing a design from three different perspectives. Generating ideas through sketching and discussion. Modelling ideas through prototypes. Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'. Come Dine With Me Writing a recipe, explaining the key steps, method and ingredients.
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			Developing design criteria to respond to a design brief.			Including facts and drawings from research undertaken. Playgrounds Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.
Threshold Concept: Make						
	Stable Structures Choosing between a small number of materials, ingredients or components. Explaining their choices based on personal experiences. Requesting equipment appropriate to the purpose. (e.g. scissors)	Balanced Diet Chopping foods safely to make a wrap. Constructing a wrap that meets a design brief. Grating foods to make a wrap. Snipping smaller foods instead of cutting.	Constructing a castle Constructing a range of 3D geometric shapes using nets. Creating special features for individual designs. Making facades from a range of recycled materials.	Adapting a recipe Following a baking recipe. Understanding safety and hygiene rules. Adapting a recipe. Torches Making a torch with a working electrical circuit and switch.	Stuffed toys Creating a 3D stuffed toy from a 2D design. Measuring, marking and cutting fabric accurately and independently. Creating strong and secure blanket stitches when joining fabric. Threading needles independently.	Navigating the world Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). Explaining material choices and why they were chosen as part of a product concept.



	for cutting, glue for joining) Beginning to use objects with a fixed width or length to create even spacing of markings or cuts (e.g. a lolly stick). Refining their grip to cut competently and confidently. Cutting straight lines and evenly spaced lines. Beginning to cut large shapes and thicker materials like card. Moving Story Book Following a design to create moving models that use levers and sliders Puppets Cutting fabric neatly with scissors.	Spreading soft foods to make a wrap. Identifying the five food groups. Learning about balanced diet. Baby Bear's chair Making a structure according to design criteria. Creating joints and structures from paper/card and tape. Building a strong and stiff structure by folding paper. Moving monster Making linkages using card for levers and split pins for pivots. Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.	Cross Stitch and applique Following design criteria to create a cushion or Egyptian collar. Selecting and cutting fabrics with ease using fabric scissors. Threading needles with greater independence. Tying knots with greater independence. Sewing cross stitch to join fabric. Decorating fabric using appliqué. Completing design ideas with stuffing and sewing the edges (Cushions) Wearable Technology Following a list of design requirements. Writing a program to control (button press)	Using appropriate equipment to cut and attach materials. Assembling a torch according to the design and success criteria Slingshot car Measuring, marking, cutting and assembling with increasing accuracy. Making a model based on a chosen design.	Using appliqué to attach pieces of fabric decoration. Sewing blanket stitch to join fabric. Applying blanket stitch so the spaces between the stitches are even and regular. Doodlers Altering a product's form and function by tinkering with its configuration. Making a functional series circuit, incorporating a motor. Constructing a product with consideration for the design criteria. Breaking down the construction process into steps so that others can make the product. Pop-up book	Programming an N,E, S, W cardinal compass. Steady hand game Constructing a stable base for a game. Accurately cutting, folding and assembling a net. Decorating the base of the game to a high quality finish. Making and testing a circuit. Incorporating a circuit into a base Come Dine With Me Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence.
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	Using joining methods to decorate a puppet. Sequencing steps for construction.	Cutting and assembling components neatly.	and/or monitor (sense light) that will initiate a flashing LED algorithm.		Following a design brief to make a pop up book, neatly and with focus on accuracy. Making mechanisms and/or structures using sliders, pivots and folds to produce movement. Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.	Playgrounds Building a range of play apparatus structures drawing upon new and prior knowledge of structures. Measuring, marking and cutting wood to create a range of structures. Using a range of materials to reinforce and add decoration to structures.
	Threshold Concept: Evaluate					
	Stable Structures Discussing existing products, saying what they like about them. Comparing two products and discuss which is better for a specific purpose.	Balanced Diet Describing appearance, smell and taste. Taste and evaluating different food combinations. Describing the information that	Constructing a castle Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.	Adapting a recipe Evaluating an adapted recipe. Evaluating and comparing a range of products. Suggesting modifications. Torches	Stuffed toys Testing and evaluating an end product and giving point for further improvements. Doodlers Carry out a product analysis to look at the	Navigating the world Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. Developing an awareness of sustainable design.



	Saying what they like about their peers' designs and products. Accepting feedback and understanding it is meant to improve their work. Moving Story Book Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. Reviewing the success of a product by testing it with its intended audience. Puppets Reflecting on a finished product, explaining likes and dislikes.	should be included on a label. Baby Bear's chair Exploring the features of structures. Comparing the stability of different shapes. Testing the strength of own structures. Identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of own structure Moving monster Evaluating own designs against design criteria. Using peer feedback to modify a final design.	Suggesting points for modification of the individual designs. Cross Stitch and applique Evaluating an end product and thinking of other ways in which to create similar items. Wearable Technology Analysing and evaluating wearable technology. Using feedback from peers to improve design.	Evaluating electrical products. Testing and evaluating the success of a final product. Slingshot car Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.	purpose of a product along with its strengths and weaknesses. Determining which parts of a product affect its function and which parts affect its form. Analysing whether changes in configuration positively or negatively affect an existing product. Peer evaluating a set of instructions to build a product. Pop-up book Evaluating the work of others and receiving feedback on own work. Suggesting points for improvement.	Identifying key industries that utilise 3D CAD modelling and explaining why. Describing how the product concept fits the client's request and how it will benefit the customers. Explaining the key functions in my program, including any additions. Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. Demonstrating a functional program as part of a product concept pitch.
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						Steady hand game Testing own and others finished games, identifying what went well and making suggestions for improvement. Gathering images and information about existing children's toys. Analysing a selection of existing children's toys. Come Dine With Me Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamination.
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						Playgrounds Improving a design plan based on peer evaluation. Testing and adapting a design to improve it as it is developed. Identifying what makes a successful structure.
	Threshold Concept: Technical					
	Stable Structures Recognising that different structures are used for different purposes. Exploring the features of structures. Describing structures as buildings or freestanding structures. Making stable structures from card.	Balanced Diet Baby Bear's chair To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness..	Constructing a castle To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures Cross Stitch and applique Wearable Technology	Adapting a recipe Torches To understand that electrical conductors are materials which electricity can pass through. To understand that electrical insulators are materials which electricity cannot pass through. To know that a battery contains stored electricity that can be used to power	Stuffed toys Doodlers To know that series circuits only have one direction for the electricity to flow. To know when there is a break in a series circuit, all components turn off. To know that an electric motor converts electrical energy into rotational	Navigating the world Steady hand game To know that batteries contain acid, which can be dangerous if they leak. To know the names of the components in a basic series circuit, including a buzzer. Come Dine With Me Playgrounds To know that structures can be strengthened by

	Creating supporting structures to aid stability. Using stable objects like cylinders to create structures. Moving Story Book To know that a mechanism is the parts of an object that move together. To know that a slider mechanism moves an object from side to side. To know that a slider mechanism has a slider, slots, guides and an object. To know that bridges and guides are bits of card that purposefully restrict the movement of the slider. Puppets	To know that a structure is something which has been formed or made from parts. To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. To know that a 'strong' structure is one which does not break easily. To know that a 'stiff' structure or material is one which does not bend easily. Moving monster To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. To know that there is always an input and	To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. To know that a Micro:bit is a pocket-sized, codeable computer. To know that a simulator is able to replicate the functions of an existing piece of technology.	products. To know that an electrical circuit must be complete for electricity to flow. To know that a switch can be used to complete and break an electrical circuit Slingshot car To understand that all moving things have kinetic energy. To understand that kinetic energy is the energy that something (object/person) has by being in motion. To know that air resistance is the level of drag on an object as it is forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance.	movement, causing the motor's axle to spin. To know a motorised product is one which uses a motor to function. Pop-up book To know that mechanisms control movement. To understand that mechanisms can be used to change one kind of motion into another. To understand how to use sliders, pivots and folds to create paper-based mechanisms.	manipulating materials and shapes.
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		output in a mechanism. To know that an input is the energy that is used to start something working. To know that an output is the movement that happens as a result of the input. To know that a lever is something that turns on a pivot. To know that a linkage mechanism is made up of a series of levers.				
Key Vocabulary Kapow Vocabulary List	Stable Structures Stable/Unstable Freestanding Join Product Structure Moving Story Book Assemble Mechanism	Balanced Diet Appearance Balanced Carbohydrates Combination Dairy Design brief Diet Grate/Grater Menu	Constructing a castle 2D shapes 3D shapes Castle Design criteria Evaluate Facade Feature Net	Adapting a recipe Adapt Addition Budget Buttery Combine Comment Construct Cream Crunchy	Stuffed toys Accurate Annotate Appendage Blanket-stitch Design criteria Detail Evaluation Fabric Sew	Navigating the world 3D CAD Application (apps) Biodegradable Boolean Cardinal compass Client Compass Concept Convince

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Model Sliders Target audience Template Puppets Decorate Fabric Hand puppet Safety pin Staple Stencil Template	Proteins Review Scissors Snip Spread Baby Bear's chair Function Man-made Mould Natural Stable Stiff Strong Structure Test Weak Moving monster Evaluation Input Level Linear motion Linkage Mechanical Mechanism Motion Oscillating motion Output	Recyclable Scoring Stable Strong Structure Tab Cross Stitch and applique Accurate Applique Cross-stitch Cushion Decorate Detail Fabric Patch Running-stitch Seam Stencil Stuffing Target audience Target customer Template Wearable Technology Analogue Analyse	Cuboid Fold Hygiene Layout Marketresearch Modify Multiplication Opinion Pounds Sieve Sift Target audience Texture Unique Wooden spoon Torches Battery Bulb Buzzer Cell Component Conductor Copper Design criteria Electrical item Electricity Electronic item Function	Shape Stuffed toy Stuffing Template Doodlers Circuit component Configuration Current Develop DIY Investigate Motor Motorised Problem solve Product analysis Series circuit Stable Target user Pop-up book Aesthetic Computer-aided design (CAD) Caption Design Design brief Design criteria Exploded-diagram Function	Corrode Duplicate Environmentally friendly Equipment Feature Finite Function Functional GPS tracker If statement Infinite Steady hand game Assemble Battery Battery pack Benefit Bulb Bulb holder Buzzer Circuit Circuit symbol Component Conductor Copper Design Design criteria Evaluation
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		Pivot Reciprocating motion Rotary motion Survey	Annotate Badge CAD Control Design criteria Develop Digital Digital revolution Digital world Display Electronic Fastening Feature Feedback Form Function Initiate Layers Loops Micro:bit Monitor Net Point of sale Product Product concept Program Sense Simulator	Insulator Series circuit Switch Test Torch Wire Slingshot car Aesthetic Air resistance Chassis Design Design criteria Function Graphics Kinetic energy Mechanism Net Structure	Input Linkage Mechanism Motion Output Pivot Prototype Slider Structure Template	Fine motor skills Fit for purpose Form Function Gross motor skills Insulator LED User Investment Lightweight Loop Manufacture Materials (wood, metal, plastic etc.) Mouldable Navigation Non-recyclable Product lifecycle Product lifespan Program Recyclable Smart Sustainable Sustainable design Unsustainable design Variable Workplane
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			Smart Technology Test User			Come Dine With Me Balance Bitter Bridge method Complement Cookbook Farm to fork Method Nationality Reared Research Pairing Preparation Salty Sour Storyboard Sweet Umami Playgrounds Adapt Apparatus Bench hook Cladding Coping saw Design Dowel Evaluation
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						Feedback Idea Jelutong Landscape Mark out Measure Modify Natural materials Plan view Playground Prototype Reinforce Sketch Strong Structure Tenon saw Texture User Vice Weak
Assessment/POP Task	Formative assessment Every lesson begins with the 'Recap and recall' section which is intended to allow pupils retrieval practice of key knowledge relevant to the upcoming lesson. This section also provides teachers with an opportunity to make informal judgements about whether pupils have retained prior learning and are ready to move on. Each lesson contains the 'Assessing progress and understanding' section which helps teachers to identify those pupils who are secure in their learning or working at a greater depth in each lesson.					

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Summative assessment

Each unit of work assesses children's understanding and retention of key knowledge using an assessment quiz with multiple choice and open-ended questions.

In addition, each unit uses a knowledge catcher. This can be used at the beginning and/or end of a unit and gives children the opportunity to further demonstrate their understanding of the key concepts covered.

Assessment quizzes, and knowledge catchers provide teachers with a record of summative assessment as evidence of progression throughout the year and as pupils move between key stages.

Summative assessment is recorded on our Foundation Subject Tracker.