



St Nicholas Church of England First School

Progression of Essential Substantive Knowledge and Learning Language

Design and Technology

(Disciplinary knowledge related to this subject are mapped out on a separate document to support the distinguishment between what we need children to know and what we expect children to do to gain new knowledge and what they do with that new knowledge. Our disciplinary knowledge is designed and centred around this subject as a discipline, where children acquire and apply these as if they were the subject expert; it is progressive and deepens in complexity, as children move through units of learning and throughout each key stage with the expectation that it can be applied across a range of key areas within this subject)

Progression of Essential Substantive Knowledge and Learning Language Year 1 Design and Technology

	Unit 1	Unit 2	Unit 3
Learning Focus	How can I make a moving toy?	How can I make a picture move?	How is bread made?
Connected Prior Learning	EYFS investigation of moving toys, e.g. cars, scooters, bikes,	Cutting, knowledge of story books and traditional tales, moving toys experience.	Making gingerbread, basic EYFS food hygiene, making cakes, decorating biscuits, how to follow a simple recipe, mixing.
New Essential, Sticky Knowledge	• Moving vehicles have wheels, axel, chassis and these form a simple mechanism. • A wheel is something that rotates to move a vehicle. • An axle can move or be fixed and holds the wheels. • A chassis is the framework of a vehicle and the axle is attached to it. • A washer holds wheels on the axle. • When a wheel and axles are joined they form a simple mechanism that provides movement. • A design is a plan of what you are going to do.	• A slider can be pushed or pulled to make something move. • A lever pivots around a fixed point to make something move. • A mechanism is a device to create movement.	• Different flavours can be added to change the flavour • Rising is when the yeast in the dough grows. • A claw grip is for chopping longer fruits and vegetables • A bridge grip is for cutting smaller fruits and vegetable • Kneading is a way of mixing and combining ingredients. • Dough is a mixture of flour and liquid and other ingredients.

			• Food can be grown, and come from plants or animals • Food can be transported from all over the world
Learning Language Development	• Vehicle • Mechanism • Wheel • Axle • Chassis • Fixed Axle • Rotating Axle • Fixed Wheel • Rotating • Washer	• Slider • Mechanism • Lever • Pivot • Wheel • Components	• Kneading • Dough • Proofing • Rising

Progression of Essential Substantive Knowledge and Learning Language Year 2 Design and Technology

	Unit 1	Unit 2	Unit 3
Learning Focus	How can materials be joined successfully?	What local sourced food could I use to make a healthy snack?	How can I make a new building for Kenya?
Connected Prior Learning	Threading in EYFS and Y1, knowledge of materials from Science in Y1.	Experience of bread making, following a recipe, food hygiene.	Linked learning in History. 2D and 3D Shape knowledge from Maths. Levers and sliders.
New Essential, Sticky Knowledge	- There are different styles of puppet with different movement. - Puppetry is an ancient art and used for story telling. - Puppets are operated by a human or computer. - Templates are used to help our design be accurate. - Fabrics can be joined or connected in different ways each with their own advantage sand disadvantages.	- Food production is seasonal. - Different countries and regions can produce different foods. - A balanced diet comprises of vegetables, fruit, proteins, fats and carbohydrates. - The benefit of having a balanced diet or a healthy snack is that I am satiated. - Food can be prepared by chopping, slicing, grating, cutting.	- Freestanding structures need to be able to support themselves. - Freestanding structures can be created in different ways. - Levers and sliders can be incorporated into designs to create openings. - Construction needs and methods may differ depending upon climate and ground type.
Learning Language Development	- Sock puppets - Hand puppets - Animatronic puppets - Finger puppets - Shadow puppets - Marionette puppets - Join - Sew - Running Stitch - Needle Thread	- Chopping - Slicing - Grating - Cutting - Balanced diet - Protein - Fat - Carbohydrate - Ingredients - Seasonal - Sourced	- Structure - Freestanding - Strength - Stability - Component - Join - Construct - Frame Structure - Stability - Centre of Gravity

Progression of Essential Substantive Knowledge and Learning Language Year 3 Design and Technology

	Unit 1	Unit 2	Unit 3
Learning Focus	How can I safely prepare my family healthy meal?	How can I make an exciting book for a younger child with moving parts?	How can I keep a special item safe?
Connected Prior Learning	Children know how to make bread and how to prepare a healthy snack. Food hygiene principles.	Understanding of moving pictures (sliders and levers) from Year 1. Literary knowledge. Human development – Science	Making puppets in Year 2 – Knowledge of stitching.
New Essential, Sticky Knowledge	- Foods are only available locally in different seasons, but are available from other countries. - Where different ingredients originate from and how they are processed. - The fork secure and claw technique to prepare and cut food. - The claw grip technique to prepare food.	- Parts can be made to move in different ways - Different functions and purposes of moving parts - Different tools and their purposes (advantages and disadvantages) - Techniques for using tools safely. - Techniques for stimulating and engaging young readers. - Difference between a lever and a linkage	- When to use each type of stitch, for instance when embroidering a pattern or sewing together a seam. - Different types of stitch such as: running stitch, a backstitch, a cross stitch and a blanket stitch - Different stitches provide more strength. - Different types of fastenings.
Learning Language Development	- Season - Imported - Exported - Grown - Reared - Caught - Fork secure	- Lever - Linkages - Fixed and loose pivots - Prototype - Model - Pivot - Guide	- Textiles - Fasteners - Style - Seam - Embroidery - Stitches - Purpose

	• Claw grip • Personal hygiene • Spreading • Slicing • Food safety • Spreading • Slicing • Grating • Presentation • Evaluation	• Rotate • Linkage • Lever Mechanism	• Materials: lace, felt, cotton, canvas, silk, plastic, • Sewing • cross stitch • back stitch • blanket stitch • running stitch
--	---	--	---

Progression of Essential Substantive Knowledge and Learning Language Year 4 Design and Technology

	Unit 1	Unit 2	Unit 3
Learning Focus	How can we light up Christmas?	How can soup raise spirits and strength?	How can we bridge the gap?
Connected Prior Learning	• Y4 Unit 1 Science – Electricity • Y3 Unit 3 Science – Light	• Y4 Unit 1 History – World War Two – Rationing • Y1 Unit 1 Science – Animals and other humans • Y2 Unit 2 Science – Animals including Humans • Y3 Unit 1 Science – Animals including Humans • Y1-Y4 Unit 2 PSHE – Happy and Healthy Me	• Y4 Geography – Rivers • Y2 Design Technology - How can I make a new building for Kenya?
New Essential, Sticky Knowledge	• Briefings give an overview of the problem a product needs to solve	• Taste, texture, colour and nutrition all forms part of a food product's suitability for user and purpose	• Different bridge structures and functions

	• Product-specific user, purpose, and design criteria. • Aesthetics is the appreciation of how well something looks • Types and weight of materials will require different joining techniques and materials • Circuit assembly needs to be completed before other materials are assembled and joined. • Circuit assembly, particularly the switch, needs to be carefully planned to ensure it meets design criteria, user and purpose. • Some resources are not as available as others – we must prioritise how they are used. • Designers evaluate as they make their product to make changes that suit user and purpose even better. • Recyclability and sustainability are important to people that buy things.	• Reasons why seasons impact and affect food availability • Farming methods (arable, pastoral, and mixed) • Different ways of safely preparing food using knives (cutting, chopping and slicing) • Hygiene practices – washing hands, tying back hair and preventing cross-contamination • The key stages of making a soup • Why each stage of preparation and making is important	• Properties of bridges and materials used to make them. • Famous bridges around the world. • The importance of careful measuring and methods of calculating measurements. • Different joining techniques.
Learning Language Development	• Briefing • Design Criteria • Assembly • Join • Materials • Resource	• Aroma • Taste • Texture • Nutrition • Appearance • Arable Farming	• Suspension bridge • Cable stayed bridge • Cantilever bridge • Arch bridge • Railway bridge • Viaduct

	• Availability • Sustainability	• Pastoral Farming • Mixed Farming • Cross-contamination • Hygiene • Preparation	
--	--	--	--

St Nicholas CE First School