Treales CE Primary School DT Knowledge Progression				
	EYFS	**KS1**	**LKS2**	**UKS2**
Design	**Communication and language** **ELG: Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. **Physical** **ELG: Fine motor** Begin to show accuracy and care when drawing.	**National Curriculum:** Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	**National Curriculum:** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	**National Curriculum:** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
	Children will know: • How to talk through their design ideas, saying what they are going to make and how they intend on making it. • That they can use pictures to develop their ideas. • That they can use drawings to communicate their design idea. • How to talk about their likes and dislikes in relation to already existing products.	**Children will know:** • That they can use pictures and words to convey what they want to design/make. • Why they should propose more than one idea for their product. • How to use kits/reclaimed materials to develop more than one idea. • How to model ideas with kits, reclaimed materials. • How to explain their method or technique using the words: First… Next… Last…. • That they can explore ideas by rearranging materials. • That they can use visuals (pictures) in the development of their ideas. • How to use drawings to record ideas as they are developed. • How to add notes/labels to their drawing to help to develop their ideas. • How to describe their models and drawings of ideas and intentions.	**Children will know:** • That they can develop more than one design or adaptation of an initial design. • How to plan a sequence of actions to make a product. • How to record the plan by drawing, using annotated sketches. • That ideas can be shown using cross-sectional and exploded diagrams. • How to use prototypes to develop and share ideas. • How to order of their work and decide upon tools and materials. • Why realistic suggestions are important in achieving their design ideas. • That the aesthetic qualities of materials should be considered when chosen. • How to use CAD (where appropriate)	**Children will know:** • How to list tools needed before starting the activity. • How to plan the sequence of work e.g. using a storyboard. • How to record ideas using annotated diagrams. • How to use models, kits and drawings to help formulate design ideas. • That they can combine modelling and drawing to refine ideas. • How to devise step by step plans which can be read / followed by someone else. • How to use exploded diagrams and cross-sectional diagrams to communicate ideas. • To sketch and model alternative ideas as part of the design process. • How to decide which design idea to develop.

	Key Vocabulary: Plan, research, think, design, idea, share, discuss, draw.	**Key Vocabulary:** Design, model, prototype, user, purpose, image, label, draw, ideas, explain, method, material, product, research.	**Key Vocabulary:** Design, model, prototype, user, purpose, image, label, draw, sketch, ideas, explain, method, material, product, research, plan, consider, function, appeal, innovate, innovative, exploded diagram, annotate, improve, adapt, cross-section, CAD (computer aided design), aesthetic.	**Key Vocabulary:** Design, model, prototype, user, purpose, image, label, draw, ideas, explain, method, material, product, research, plan, consider, function, appeal, innovate, innovative, exploded diagram, annotate, improve, adapt, cross-section, CAD (computer aided design), aesthetic, sequence, sketch, refine, design criteria.
Make	**Physical** **ELG: Fine motor** Use a range of small tools, including scissors. **Expressive Arts and Design** **ELG: Creating with Materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	**National Curriculum:** Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	**National Curriculum:** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	**National Curriculum:** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
	Children will know: • That they can adapt their design while they are making it. • How to talk through what they are making. • That different materials have different properties. • How to use small tools such as scissors to make their product. • That tools should be used safely and with care. • That different materials can be combined as part of the design process.	**Children will know:** • How to talk through their design process as they make it and describe what they need to do next. • Which materials to select from a limited range so that they will meet the design criteria. • The name of tools needed to work the materials and select them appropriately. • How to offer an explanation of the materials they are using and why.	**Children will know:** • How to prepare pattern pieces as templates for their design. • How to cut slots. • How to cut internal shapes. • Which tools to select (from a range) for cutting shaping joining and finishing. • How to use tools with increasing accuracy. • Which techniques to use for different parts of the process. • Which materials to select according to their functional properties. • How to plan the stages of the making process. • Which appropriate finishing techniques they should use for their design.	**Children will know:** • How and why we make prototypes. • How to develop one idea in depth. • How to use researched information to inform decisions. How to produce detailed lists of ingredients / components / materials and tools. • How to use a computer to model ideas. • How to select from and use a wide range of tools and materials. • How to cut accurately and safely to a marked line. • Which finishing techniques are appropriate for the project. • How to refine their product – review and rework/improve.

	Key Vocabulary: Make, measure, cut, form, shape, join, attach, material, tool, discuss, construct, product.	**Key Vocabulary:** Make, construct, design, process, description, materials, explain, use, model, develop, generate, prototype, attach, stick, communicate, discuss, cut, shape, join, purpose, user.	**Key Vocabulary:** Practical, use, construct, form, cut, stick, shape, join, attach, finish, communicate, annotate, discuss, exploded diagram, sketch, pattern piece, CAD (computer aided design), properties, process, technique, assess, plan, prototype, accuracy, material, improve.	**Key Vocabulary:** Practical, use, construct, form, cut, stick, shape, join, attach, finish, communicate, annotate, discuss, exploded diagram, sketch, pattern piece, CAD (computer aided design), properties, process, technique, assess, plan, prototype, accuracy, material, research, inform, rework, refine, develop, component.
Textiles	**Physical** **ELG: Fine motor** Use a range of small tools, including scissors	**National Curriculum:** Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of textiles according to their characteristics	**National Curriculum:** select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials, components and textiles, according to their functional properties and aesthetic qualities.	**National Curriculum:** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials, components and textiles, according to their functional properties and aesthetic qualities.
	Children will know: • How to use scissors to cut out pieces of fabric. • How to join two pieces of fabric together using a running stitch or glue. • That fabrics can be decorated by attaching items such as sequins or ribbon. • That they can use fabric pens to add decoration or change the colour of a piece of fabric.	**Children will know:** • How to cut out shapes which have been created by drawing round a template onto the fabric. • How to join fabrics by using e.g. running stitch, glue, staples, over sewing, tape. • That fabrics can be decorated by attaching items e.g. buttons, beads, sequins, braids, ribbons. • How to change the colour fabrics using a range of techniques e.g. fabric paints, printing, painting.	**Children will know:** • The vocabulary associated with tools, materials and their properties. • What the term seam allowance means and how to use it. • How to join fabrics using running stitch, back stitch, blanket stitch. • How to create a prototype of a product. • How to use prototype to make pattern or pattern pieces. • That fabrics can be strengthened or stiffened. • Some of the fastenings that can be used to join fabrics together. • How to sew on buttons and make loops. • How to apply different decoration techniques.	**Children will know:** • The correct vocabulary appropriate to the project. • How to create 3D products using patterns pieces and seam allowance. • How to use a pattern layout. • How to decorate textiles appropriately (often before joining components). • How to pin and tack fabric pieces together. • How to join fabrics using over sewing, back stitch, blanket stitch. • How to combine fabrics to create more useful properties. • The importance of making quality products.
	Key Vocabulary: Sew, needle, thread, attach, join, construct, form, make, stitch, decorate, fabric, material, felt, button, measure, fasten, cut, stick, glue.	**Key Vocabulary:** Sew, needle, thread, attach, join, construct, form, make, stitch, running stitch, tape, decorate, fabric, material, felt, button, measure, fasten, print, paint, create, finish, template, textile.	**Key Vocabulary:** Sew, needle, thread, attach, join, construct, form, make, stitch, running stitch, tape, decorate, fabric, material, felt, button, measure, fasten, print, paint, create, finish, template, textile, prototype, applique, pattern piece, stiffen, strengthen, apply, seam allowance, back stitch, blanket stitch, function, aesthetic.	**Key Vocabulary:** Sew, needle, thread, attach, join, construct, form, make, stitch, running stitch, tape, decorate, fabric, material, felt, button, measure, fasten, print, paint, create, finish, template, textile, prototype, applique, pattern piece, stiffen, strengthen, apply, seam allowance, back stitch, blanket stitch, function, aesthetic, over sewing, combination, quality, pin, tack.

Structures	**Expressive Arts and Design** **ELG: Creating with Materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	**National Curriculum:** Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, according to their characteristics. Build structures, exploring how they can be made stronger, stiffer and more stable	**National Curriculum:** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.	**National Curriculum:** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.
	Children will know: • How to create a variety of structures using different construction materials e.g lego, wooden bricks. • How to balance different structures using supports when required. • That different construction materials have different properties such as how they are attached together.	**Children will know:** • How to make structures stronger through exploration. • The different techniques used for stiffening a variety of materials through investigation. • How to test different methods of enabling structures to remain stable. • How to join appropriately for different materials and situations e.g. glue, tape. • How to mark out materials to be cut using a template. • How to use a glue gun with close supervision.	**Children will know:** • Which vocabulary to use related to the project. • How to create shell or frame structures. • How to strengthen frames with diagonal struts. • How to make structures more stable by giving them a wide base. • How to measure and mark square section, strip and dowel accurately to 1cm.	**Children will know:** • The correct terminology for tools materials and processes. • Use bradawl to mark hole positions. • Use hand drill to drill tight and loose fit holes. • How to cut strip wood, dowel, square section wood accurately to 1mm. • How to join materials using appropriate methods. • How to build frameworks to support mechanisms. • How to stiffen and reinforce complex structures.
	Key Vocabulary: Connect, attach, construct, balance, shape, form, tower, bridge, purpose, support.	**Key Vocabulary:** Structure, explore, strengthen, stiffen, support, investigate, join, construct, template, attach, glue, stable, shape, material.	**Key Vocabulary:** Structure, equipment, explore, support, strengthen, stiffen, reinforce, function, purpose, cut, shape, join, attach, shell, frame, strut, engineer, measure, mark, accuracy, base.	**Key Vocabulary:** Structure, equipment, explore, support, strengthen, stiffen, reinforce, function, purpose, cut, shape, join, attach, shell, frame, strut, engineer, measure, mark, accuracy, base, process, drill, position, strip wood, dowel, framework.

Mechanical and Electrical Systems and ICT	N/A	**National Curriculum:** Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**National Curriculum:** Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products.	**National Curriculum:** Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products.
	Children will know: N/A	**Children will know:** • How to join different materials together e.g. glue, tape. • How to experiment with different axle fixings and their strengths and weaknesses. • How to make vehicles with construction kits which contain free running wheels. • That they can use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. • Cut dowel using hacksaw and bench hook. • How to attach wheels to a chassis using an axle. • How to mark out materials to be cut using a template. • How to fold, tear and cut paper and card. • How to cut along lines, straight and curved. • How to use a hole punch. • How to insert paper fasteners for card. • That different levers and sliders can make things move in a 2D plane in different ways.	**Children will know:** • Which vocabulary to use in relation to the project. • How to use mechanical systems such as gears, pulleys, levers and linkages. • How to incorporate a circuit into a model. • How to use electrical systems such as switches, bulbs and buzzers. • That they can use ICT to control products. • How to use lolly sticks/card to make levers and linkages. • How to use linkages to make movement larger or more varied.	**Children will know:** • Which technical vocabulary to use in relation to a project. • How to use mechanical systems such as cams, pulleys and gears. • How to use electrical systems such as motors. • How to program, monitor and control using ICT.
	Key Vocabulary: N/A	**Key Vocabulary:** Purpose, strength, weakness, join, glue, attach, tape, material, wood (batten, dowel), vehicle, wheel, axle, turn, spin, mark, template, cut, position, fasten, lever, slider.	**Key Vocabulary:** Purpose, strength, weakness, join, glue, attach, tape, material, wood (batten, dowel), mechanical, circuit, gear, pulley, lever, linkages, electrical system, bulb, switch, movement, adapt, monitor, adjust, program, structure, make, construct, user.	**Key Vocabulary:** Purpose, strength, weakness, join, glue, attach, tape, material, wood (batten, dowel), mechanical, circuit, gear, cam, motor, pulley, lever, linkages, electrical system, bulb, switch, movement, adapt, monitor, adjust, program, structure, make, construct, user.

Evaluate	**Communication and Language** **ELG: Speaking** Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher. **Expressive Art and Design** **ELG: Creating with Materials** Share their creations, explaining the process they have used.	**National Curriculum:** Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria	**National Curriculum:** Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world	**National Curriculum:** Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals in design and technology have helped shape the world
	Children will know: • How to communicate their thoughts and opinions about their final project (with sentence starter support if required) • How to talk about their creations, the reason for their design and the process they used to make it. • That a design can be adapted and will talk about any changes they would make. • How to communicate (verbal) whether they believe their design meets its intended purpose.	**Children will know:** • How to explore existing products and investigate how they have been made. • How to decide whether existing products do/do not achieve their purpose. • How to talk about their design as they develop and identify good and bad points. • That changes can be made during the making process as annotation to plans/drawings. • How to say what they like and do not like about items they have made and attempt to say why. • How to communicate whether their finished product meets their design criteria and how well it meets the needs of the user.	**Children will know:** • How to investigate similar products to the one to be made to give starting points for a design. • That they can draw/sketch products to help analyse and understand how products are made. • How to research the needs of a user. • How to identify the strengths and weaknesses of their design ideas in relation to purpose/user. • How to choose between designs to decide which design idea to develop. • How the finished product could be improved. • How well the finished product meets the design criteria of the user. • About key events and individuals in Design and Technology.	**Children will know:** • How to research and evaluate existing products (including book and web-based research). • They need to consider user and purpose. • How to identify the strengths and weaknesses of their design ideas. • How to give a report using correct technical vocabulary. • How the finished product could be improved related to design criteria and be able to explain this. • How well the finished product meets the design criteria of the user and be able to discuss this. • How key people have influenced design.
	Key Vocabulary: Discuss, share, opinion, think, thought, change, adapt, purpose, communicate, design.	**Key Vocabulary:** Discuss, share, opinion, think, thought, change, adapt, purpose, evaluate, evaluation, investigate, communicate, design, annotate, communicate, product, user.	**Key Vocabulary:** Discuss, share, opinion, think, thought, change, adapt, purpose, evaluate, evaluation, investigate, communicate, design, annotate, communicate, product, user, reflect, improve, research, analyse, compare, strength, weakness.	**Key Vocabulary:** Discuss, share, opinion, think, thought, change, adapt, purpose, evaluate, evaluation, investigate, communicate, design, annotate, communicate, product, user, reflect, improve, research, analyse, compare, strength, weakness, report, design criteria.
Cooking and nutrition	**PSED** **ELG: Managing self** Manage their own basic hygiene and personal needs and understanding the importance of healthy food choices.	**National Curriculum:** Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	**National Curriculum:** 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	**National Curriculum:** 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.	Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
	Children will know: • Why it is important to wash their hands before food preparation. • How to group familiar foods, e.g fruit and vegetables. • A range of vocabulary to describe foods according to their tastes, smell and feel. • How to use tools (e.g. knives and scissors) safely as part of food preparation. • About why they should eat a balanced diet and be able to give examples of healthy or unhealthy foods.	**Children will know:** • A range of vocabulary associated with food using taste, smell, texture and feel. • How to group familiar food products e.g. fruit and vegetables. • Where food comes from. • How to cut, peel, grate, chop a range of ingredients • How to work safely and hygienically. • Why there is a need for a variety of foods in a diet. • How to measure and weigh food items, non-statutory measures e.g. spoons, cups.	**Children will know:** • The vocabulary/knowledge associated with, smell, taste, texture and feel. • How to analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). • How to follow instructions/recipes. • About making healthy eating choices – using the Eatwell plate. • How to join and combine a range of ingredients together. • About the seasonality of vegetables and fruit. • Which fruit and vegetables are grown in countries/continents studied in Geography.	**Children will know:** • How to prepare food products taking into account the properties of ingredients and sensory characteristics. • How to weigh and measure using scales. • How to select and prepare foods for a particular purpose. • How to work safely and hygienically. • What a healthy diet consists of (using the eatwell plate). • How to demonstrate a range of cooking techniques. • Where and how ingredients are grown and processed. • About the influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc.
	Key Vocabulary: Diet, healthy, unhealthy, taste, sour, sweet, juicy, bitter, savoury, smell, feel, texture, rough, smooth, bumpy, hairy, balance, food, fruit, hygiene, clean, safe, tools, prepare.	**Key Vocabulary:** Diet, healthy, unhealthy, taste, sour, sweet, juicy, bitter, savoury, smell, feel, texture, rough, smooth, bumpy, hairy, balance, food, fruit, hygiene, clean, safe, tools, prepare, chop, peel, grate, ingredients, recipe, measure, weigh, variety, purpose.	**Key Vocabulary:** Diet, healthy, unhealthy, taste, sour, sweet, juicy, bitter, savoury, smell, feel, texture, rough, smooth, bumpy, hairy, balance, food, fruit, hygiene, clean, safe, tools, prepare, chop, peel, grate, ingredients, recipe, measure, weigh, variety, purpose, healthy eating, seasonality, combine, combination,	**Key Vocabulary:** Diet, healthy, unhealthy, taste, sour, sweet, juicy, bitter, savoury, smell, feel, texture, rough, smooth, bumpy, hairy, balance, food, fruit, hygiene, clean, safe, tools, prepare, chop, peel, grate, ingredients, recipe, measure, weigh, variety, purpose, healthy eating, seasonality, combine, combination, scales, technique, process, influence, sustainable.