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	Nursery		
	Termly skills and knowledge focus	**Disciplinary Concepts** (Skills needed for Design Technology)	**Key End Points**
Autumn **Topic A – All about me** **Topic B – Journeys**	*Joining materials to make models of vehicles, focus on* ***wheels*** *Drawing using different types of lines*	***DESIGNING:*** *Think of and talk about ideas. Begin to draw my ideas using different types of lines. Begin to identify a purpose for my idea.* ***MAKING:*** *Select and join materials using simple tools and techniques.* ***EVALUATING:*** *Talk about what I am making, begin to express what I like how I might change it.* ***HEALTHY LIVING****: begin to make healthy food choices*	• **EAD Creating with materials: Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.** • **PD: Use one-handed tools and equipment, for example, making snips in paper with scissors, use tape. Use a comfortable grip with good control when holding pens and pencils.** • **PD: Make healthy choices about food and drink** • **CL: Be able to express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions. Can start a conversation with an adult or a friend and continue it for many turns.**
Spring **Topic A – Dinosaurs** **Topic B – Growing and Changing**	*Ongoing provision (adult interaction and challenges) – workshop, large and small construction - inside and outside.*		
Summer **Topic A – Animals and their babies** **Topic B – Heroes and Adventurers**	*Building and balancing blocks and combining small world resources to create enclosures (Creating homes for animals)* ***Design*** *and make story telling crowns for story telling sessions.*		

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	Reception		
	Termly skills and knowledge focus	**Disciplinary Concepts** (Skills needed for Design Technology)	**Key End Points** (Blue end points – ELG)
Autumn **Topic A – All about me** **Topic B – Transport: Past and Present**	Aut 2 PD fine motor: Small tools inc. scissors Drawing transport, junk modelling vehicles Design: making a boat that floats and another vehicle that moves with wheels - introduce the idea of wheels and axles Vocabulary and concept of **wheels and axles**.	***DESIGNING:*** *Have lots of my own ideas for models. Begin to think about the purpose/ design criteria. Draw my ideas and plans* ***MAKING:*** *Select materials for a purpose. Make decisions about the tools and techniques needed to join materials.* ***EVALUATING:*** *Describe what they like about the finished product, suggest and make changes/improvements and give reasons for choices of materials and tools.* ***HEALTHY LIVING:*** *understand the importance of healthy food choices*	• Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively sharing ideas, resources and skills. • Safely using scissors with increased accuracy
Spring **Topic A – Space** **Topic B – Growing and Changing**	Spr 1 PD scissor skills cutting shapes Puppets: Chinese New Year		• Articulate their ideas and thoughts in well-formed sentences. • Connect one idea or action to another using a range of connectives. • Begin to recognise the importance of healthy food choices • Begin to understand the concept of wheels and axles • Know why some materials and tools are good choices for different projects. • Increasing accuracy of scissor skills, improved use of glue and tape for joining, and fine motor skills for building with construction kits.
Summer **Topic A – Kings and Queens** **Topic B – Stories from the past**	Sum 2 Fashion: experimenting with fabric to design a suitable sun hat for changing weather – criteria (safe, fun and colourful) - introduce the concept of **design criteria** when discussing ideas and materials.		• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; • Share their creations, explaining the process they have used; • Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; • 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. • Use a range of small tools, including scissors, paint brushes and cutlery • Begin to show accuracy and care when drawing. • Understand the importance of healthy food choices

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	Year 1		
	Vocabulary/Concepts	**Disciplinary Concepts (Skills needed for Design Technology)**	**Key End Points Knowledge**
Autumn 1 – Food – fruit and vegetables	Fruit Healthy Ingredients Peel Recipe Slice Smoothie Stencil Template Vegetable	Designing • Designing smoothie carton packaging by-hand or on ICT software. Making • Chopping fruit and vegetables safely to make a smoothie. Evaluating • Tasting and evaluating different food combinations. • Describing appearance, smell and taste. • Suggesting information to be included on packaging.	Aut 1 Food and Nutrition • Understanding the difference between fruits and vegetables. • To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). • To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds and a vegetable does not. • To know that fruits grow on trees or vines. • To know that vegetables can grow either above or below ground. • To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).
Autumn 2 – Mechanisms – a moving story book	Mechanisms Assemble Design Evaluation Mechanism Model Sliders Stencil Target audience Template Test	Designing Explaining how to adapt mechanisms, using bridges or guides to control the movement. • Designing a moving story book for a given audience. Making • Following a design to create moving models that use levers and sliders. Evaluating • 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	Aut 2 Technical knowledge • 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. Additional knowledge • To know that in Design and technology we call a plan a ‘design’.

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		product by testing it with its intended audience.	
Spring 1 – Structures/mechanisms – constructing a windmill	Client Design Evaluation Net Stable Strong Test Weak Windmill	Designing • Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design. Making• Making stable structures from card, tape and glue . • Learning how to turn 2D nets into 3D structures. • Following instructions to cut and assemble the supporting structure of a windmill. • Making functioning turbines and axles which are assembled into a main supporting structure. Evaluating Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements.	Spr 1 Technical knowledge • To understand that the shape of materials can be changed to improve the strength and stiffness of structures. • To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses). • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different structures are used for different purposes. • To know that a structure is something that has been made and put together. Additional knowledge • To know that a client is the person I am designing for. • To know that design criteria is a list of points to ensure the product meets the clients needs and wants. • To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. • To know that windmill turbines use wind to turn and make the machines inside work. • To know that a windmill is a structure with sails that are moved by the wind. • To know the three main parts of a windmill are the turbine, axle and structure.
Spring 2 – Textiles – puppets, joining fabrics	Decorate Design Fabric Glue Model Hand puppet Safety pin	Designing• Using a template to create a design for a puppet. Making• Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing steps for construction.	Spring 2: • To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples. glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.

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	Staple Stencil Template	Evaluating• Reflecting on a finished product, explaining likes and dislikes.	• To know that drawing a design idea is useful to see how an idea will look.
Summer 1 – Mechanisms – wheels and axles	Axle Axle holder Chassis Design Evaluation Fix Mechanic Mechanism Model Test Wheel	Designing • Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. • Creating clearly labelled drawings that illustrate movement. Making • Adapting mechanisms, when: ● they do not work as they should. ● to fit their vehicle design. ● to improve how they work after testing their vehicle. Evaluating • Testing wheel and axle mechanisms, identifying what stops the wheels from turning, and recognising that a wheel needs an axle in order to move.	Sum 1 Technical knowledge • To know that wheels need to be round to rotate and move. • To understand that for a wheel to move it must be attached to a rotating axle. • To know that an axle moves within an axle holder which is fixed to the vehicle or toy. • To know that the frame of a vehicle (chassis) needs to be balanced. Additional knowledge • To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.
Summer 2 – Recap – invention challenge	Design Client Criteria Structure Assemble Fix Test Evaluate	Designing Making Evaluating	Sum 2 – apply a range of skills and knowledge from the last 5 units.

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	Year 2		
	Vocabulary/Concepts	**Disciplinary Concepts (Skills needed for Design Technology)**	**Key End Points Knowledge**
Autumn 1 – Food – A Balanced Diet	Alternative Diet Balanced diet Evaluation Expensive Healthy Ingredients Nutrients Packaging Refrigerator Sugar Substitute	Designing • Designing a healthy wrap based on a food combination which work well together. Making • Slicing food safely using the bridge or claw grip. • Constructing a wrap that meets a design brief. Evaluating • Describing the taste, texture and smell of fruit and vegetables. • Taste testing food combinations and final products. • Describing the information that should be included on a label. • Evaluating which grip was most effective	Aut 1 Food and Nutrition • To know that 'diet' means the food and drink that a person or animal usually eats. • To understand what makes a balanced diet. • To know where to find the nutritional information on packaging. • To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. • To understand that I should eat a range of different foods from each food group, and roughly how much of each food group. • To know that nutrients are substances in food that all living things need to make energy, grow and develop. • To know that 'ingredients' means the items in a mixture or recipe. • To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy. • To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.
Autumn 2 – Mechanisms – a fairground wheel	Axle Decorate Evaluation Ferris wheel Mechanism Stable Strong Test Waterproof	Designing • Selecting a suitable linkage system to produce the desired motion. • Designing a wheel. Making • Selecting materials according to their characteristics. • Following a design brief Evaluating • Evaluating different designs. • Testing and adapting a design.	Aut 2 Technical knowledge • To know that different materials have different properties and are therefore suitable for different uses. Additional knowledge • To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder. • To know that it is important to test my design as I go along so that I can solve any problems that may occur.

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	Weak		
Spring 1 – Mechanisms – Making a moving monster	Evaluation Input Lever Linear motion Linkage Mechanical Mechanism Motion Oscillating motion Output Pivot Reciprocating motion Rotary motion Survey	Designing • Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design. Making• Making stable structures from card, tape and glue . • Learning how to turn 2D nets into 3D structures. • Following instructions to cut and assemble the supporting structure of a windmill. • Making functioning turbines and axles which are assembled into a main supporting structure. Evaluating Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements.	Spr 1 Technical knowledge • 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 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. Additional knowledge • To know some real-life objects that contain mechanisms.
Spring 2 – Structures – Baby Bear's Chair	Function Man-made Mould Natural Stable Stiff Strong	Designing• Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects. Making • Making a structure according to design	Spring 2: • 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. • 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.

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	Structure Test Weak	criteria. • Creating joints and structures from paper/card and tape. • Building a strong and stiff structure by folding paper. Evaluating • 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.	• 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. Additional Knowledge • To know that natural structures are those found in nature. • To know that man-made structures are those made by people.
Summer 1 – Textiles – Making a pouch	Accurate Fabric Knot Pouch Running-stitch Sew Shape Stencil Template Thimble	Designing • Designing a pouch Making • Selecting and cutting fabrics for sewing. • Decorating a pouch using fabric glue or running stitch. • Threading a needle. • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric. • Neatly pinning and cutting fabric using a template. Evaluating • Troubleshooting scenarios posed by teacher. • Evaluating the quality of the stitching on others' work. • Discussing as a class, the success of their stitching against the success criteria. • Identifying aspects	Sum 1 Technical knowledge • To know that sewing is a method of joining fabric. • To know that different stitches can be used when sewing. • To understand the importance of tying a knot after sewing the final stitch. • To know that a thimble can be used to protect my fingers when sewing.

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		of their peers' work that they particularly like and why.	
Summer 2 – Recap – invention challenge	Design Client Survey Criteria Function Structure Mechanism Assemble Stability Strength Fix Test Evaluate	Designing Making Evaluating	Sum 2 – apply a range of skills and knowledge from the last 5 units.