Curriculum Progression Map – Design and Technology

Year group	Term	Knowledge	Key skills	Key vocabulary
Reception	Autumn	• To know that a design is a way of planning our idea before we start. • To know that threading is putting one material through an object.	Discussing what a good design needs. Designing a simple pattern with paper Choosing from available materials Developing fine motor/cutting skills with scissors. Exploring fine motor/threading and weaving (under, over technique) with a variety of materials Reflecting on a finished product and comparing to their design.	Design, push, pull, through, front, back, scissors, cut, thread, weave, under, over

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Year 1	Autumn **Design and Technology** – Constructing a windmill	• 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. • To know that the sails or blades of a windmill are moved by the wind. • To know that a structure is something built for a reason. • To know that stable structures do not topple. • To know that adding weight to the base of a structure can make it more stable. • To know that design criteria is a list of points to ensure the product meets the client's 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. • To know that windmills are used to generate power and were used for grinding flour.	Learning the importance of a clear design criteria. Including individual preferences and requirements in a design. Making stable structures from card. 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. Finding the middle of an object. Puncturing holes. Adding weight to structures. Creating supporting structures. Cutting evenly and carefully 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.	Axle, bridge, design design criteria, model net, packaging, structure, template, unstable, stable, strong weak

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Year 2	Autumn **Design and Technology** – 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. • 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. • To know that natural structures are those found in nature. • To know that man-made structures are those made by people.	Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects. 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. 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.	design criteria, man-made, natural, properties, structure, stable, shape, model, test

Curriculum Progression Map – Design and Technology

Reception	Spring Junk Modelling	• To know there are a range to different materials that can be used to make a model and that they are all slightly different. • Making simple suggestions to fix their junk model.	Making verbal plans and material choices. Developing a junk model. Improving fine motor/scissor skills with a variety of materials. Joining materials in a variety of ways (temporary and permanent). Joining different materials together. Describing their junk model, and how they intend to put it together. Giving a verbal evaluation of their own and others' junk models with adult support. Checking to see if their model matches their plan. Considering what they would do differently if they were to do it again. Describing their favourite and least favourite part of their model.	Join, stick, cut, bend, slot Smooth, bendy, bumpy, scissors, blades, handle, snip, cut, squeeze, thumb, fingers, elbow, bubble wrap, cooked pasta, tin foil, playdough, straws

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Year 1	Spring **Design and Technology** – Textiles: Puppets	• 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. • To know that drawing a design idea is useful to see how an idea will look.	• Using a template to create a design for a puppet. • Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing steps for construction • Reflecting on a finished product, explaining likes and dislikes.	Decorate, design, fabric, glue, model, hand puppet, safety pin Staple, stencil, template

Curriculum Progression Map – Design and Technology

Year 2	Spring **Design and Technology** – Textiles: Pouches	• 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.	Designing a pouch. 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. 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 of their peers' work that they particularly like and why.	Decorate, fabric, fabric glue, knot needle, needle threader running stitch, sew template, thread

Curriculum Progression Map – Design and Technology

Year 1	PSHCE week **Design and technology**– Cooking and nutrition· Smoothies	• To know that a blender is a machine which mixes ingredients together into a smooth liquid· • To know that a fruit has seeds· • To know that fruits grow on trees or vines· • To know that vegetables can grow either above or below ground· • To know that vegetables is any edible part of a plant (e·g· roots: potatoes, leaves: lettuce, fruit: cucumber)·	Designing smoothie carton packaging by-hand· Chopping fruit and vegetables safely to make a smoothie· Juicing fruits safely to make a smoothie· Tasting and evaluating different food combinations· Describing appearance, smell and taste· Suggesting information to be included on packaging· Comparing their own smoothie with someone else's·	Fruit, vegetable Seed, leaf, root, stem Smoothie, healthy Carton, design, flavour, peel, slice, balanced diet Balance, carbohydrate, dairy, oils, sugar, protein, ingredients

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Year 2	PSHCE week **Design and technology**– Cooking and nutrition: Balanced Diet	• 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 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 'ingredients' means the items in a mixture or recipe.	Designing three wrap ideas based on a food combination which work well together. 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. 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 food by giving a score.	Appearance, balanced, carbohydrates, chopping board, combination, cut, dairy, design, design brief, diet, evaluate, feel, fruit, grate, grater, ingredients, menu, oils, proteins, review, scissors, smell, snip, spread, spreads, table knife, taste, vegetables

Curriculum Progression Map – Design and Technology

Reception	Summer Cooking and Nutrition	• To know that fruit salad is ingredients mixed together. • To know that fruits are grown. • To recognise and name some common fruits. • To know that different fruits taste different. • To know that eating fruits is good for us. • To discuss why different packages might be used for different foods.	Designing a fruit salad recipe as a class. Chopping plasticine safely. Chopping fruit with support Tasting the fruit salad and giving opinions. Describing some of the following when tasting food: look, feel, smell and taste. Choosing their favourite packaging design and explaining why	Knife, chopping board, hob, boil, blend, mix, soup, creamy, sweet, sour, dry, wet, watery, delicious

Curriculum Progression Map – Design and Technology

Year 1	Summer **Design and Technology** – Mechanisms: Making a 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, slot, guides and an object. • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider. • To know that in Design and technology we call a plan a 'design'.	Explaining how to adapt mechanisms, using bridges or guides to control the movement. Designing a moving story book for a given audience. Following a design to create moving models that use levers and sliders. 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.	Adapt, assemble, design, design criteria, input, mechanism, model, sliders, test

Curriculum Progression Map – Design and Technology

Year 2	Summer **Design and Technology** – Mechanisms 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 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.	Creating a class design criteria for a moving monster. Designing a moving monster for a specific audience in accordance with a design criteria. Making linkages using card for levers and split pins for pivots. Experimenting with linkages adjusting the widths, lengths and thicknesses of card used. Cutting and assembling components neatly. Evaluating own designs against design criteria. Using peer feedback to modify a final design.	Axle, design criteria! Input, linkage, mechanical, output, pivot, wheel

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