Dovedale Primary School
Long term plan

Design & Technology

YR	Autumn	
	Title: Making a celebration card	**Vocab: cut, fold, fix, glue, guideline, make**
	Required prior knowledge Children should know: Glue can be used to stick materials together Scissors will cut materials	End point **Design** • To choose a design from a range of examples. **Make** • To make a 3D celebration card. • To be able to cut out shapes, fold paper and glue materials together with some support **Evaluate** • To talk about the 3D mechanism and how this has an effect on the card.
	Spring	
	Constructing a trap	**Vocab: attach, plan, secure, strong, enclosure, structure**
	Required prior knowledge Children should know: Understand different resources can be used together (indoor and outdoor resources)	End point **Design** • To design a trap and choose resources to use to construct it **Make** • To be able to follow a design and begin to adapt their trap using their own imagination **Evaluate** • To talk about why they have changed their design. • To explain how their trap works

Dovedale Primary School
Long term plan

Design & Technology

	Summer	
	Making a sandwich	**Vocab: spread, glide, even, cut, press, grate, ingredients**
	Required prior knowledge Children should know: The structure of a sandwich starts with bread. Name a range of sandwich fillers	End point **Cooking and nutrition** **Design** • To choose their bread and filler **Make** • To spread an appropriate amount of butter on the bread, and complete with a filler • To know which slice to move to put on top • To cut a sandwich in half using a bridge method • To understand the sequence **Evaluate** • To talk about how their sandwich looks and whether they like the taste

Dovedale Primary School
Long term plan

Design & Technology

Y1	Autumn	
	Title: Making a moving Christmas card	**Vocab: Assemble, Design, Evaluation, Mechanism, Model, Sliders, Prototype, Template, Test**
	Required prior knowledge **Children should know:** **Design** Designing a 3D product for a celebration event Discuss an appropriate method to make something 3D **Make** With support, follow a design to create a pop out card suitable for a special occasion or celebration Cutting out suitable shapes Folding and gluing materials together **Evaluate** Testing a finished product, seeing whether it serves its purpose and explain how it works **Technical** To know that there are different methods to make something 3D To know that cutting and attaching needs to be accurate in order for the product to work successfully	**End point** **Design** • Explaining how to adapt mechanisms, using bridges or guides to control the movement. • Designing a moving story book for a given audience. **Make** • Following a design to create moving models that use levers and sliders. **Evaluate** • 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 **Technical** • 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. **Additional** • To know that in Design and technology we call a plan a ‘design’.

Dovedale Primary School
Long term plan

Design & Technology

Spring

Title: Making a fruit pot.

Vocab: Blender, Carton, Fruit, Healthy, Ingredients, Peel, Peeler, Recipe, Slice, Stencil, Template, Vegetable

Required prior knowledge

Children should know:

Design

Designing an advert for a food product.

Make

A range of fruit can go into a fruit pot.
This fruit has been prepared – washed, peeled, sliced or diced

Evaluate

Tasting and evaluating different food combinations.
Describing appearance, smell and taste.

Cooking and nutrition

To cut safely using the bridge method.
To understand a sequence of steps.
To know how to hold utensils appropriately and effectively.
To know that too much or too little of a product will have an effect on the taste.

End point

Design

- Design a fruit pot carton packaging.

Make

- Chopping fruit and vegetables safely to make a fruit pot
- Identifying if a food is a fruit
- Choosing fruits that complement each other

Evaluating

- Tasting and evaluating different food combinations
- Describing appearance, smell and taste
- Suggesting information to be included on packaging

Cooking and nutrition

- Understanding the difference between fruits and other foods
- To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber)
- To know that a fruit has seeds and a vegetable does not
- To know that fruits grow on trees or vines

Dovedale Primary School
Long term plan

Design & Technology

Summer

Title: Constructing a windmill

Vocab: Client, Design, Evaluation, Net, Stable, Strong, Test, Weak, Windmill

Required prior knowledge

Children should know:

Design
Designing a product for a given purpose (trap).

Make
Following a design to create a working product for a specific use.

Evaluate
Testing a finished product, seeing whether it serves its purpose and explain how it works.

Technical
To know that there are a range of different ways to construct materials.
To know that moving parts need to act together to be successful.

End point

Design
• Learning the importance of a clear design criteria
• Including individual preferences and requirements in a design
• To know that design criteria is a list of points to ensure the product meets the clients' needs and wants

Make
• 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

Evaluate
• 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

Technical
• 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 on an axis
• 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
• To know that a client is the person I am designing for
• 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.

Dovedale Primary School
Long term plan

Design & Technology

Y2	Autumn	
	Title: Making a pouch	**Vocab: Accurate, Fabric, Knot, Running stitch, Sew, Shape, Stencil, Stuffing Template, Thimble**
	Required prior knowledge **Children should know:** **Design** Designing a product for a given audience. To know that their design should be based on existing products. **Make** Following a design to create a useful product. **Evaluate** Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.	**End point** **Design** • Designing a pouch using knowledge of existing products • Choose suitable and appealing material **Make** • Selecting and cutting fabrics for sewing with support • Threading a needle with support • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric • Neatly pinning and cutting fabric using a template • Deciding and designing what stitch to use and different appliques they can attach to their product. **Evaluate** • Identify if stitches are evenly spaced and to scale • Identify if appliques are attached appropriately and safely for the target audience • Discuss improvements for next time **Additional** • 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 fingers when sewing

Dovedale Primary School
Long term plan

Design & Technology

Spring

Title: Making a wrap

Vocab: Balanced diet, Evaluation, Expensive, Healthy, Ingredients, Nutrients, Packaging, Refrigerator, Sugar, Substitute

Required prior knowledge

Children should know:

Design

A design is used in packaging.

Make

Holding equipment safely.
Chopping safely.
Choosing complementary foods to go together.

Evaluate

Tasting and evaluating different food combinations.
Describing appearance, smell and taste.

End point

Design

- Designing a wrap based on a food combination which work well together
- Design packaging for their food product

Make

- Slicing food safely using the bridge or claw grip
- Constructing a wrap that meets a design brief
- Follow a sequence of instructions (recipe)

Evaluate

- Describing the taste, texture and smell of the pasta bake.
- Taste testing food combinations and final products.
- Describing the information that should be included on a label.
- Evaluating which grip was most effective.

Cooking 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 a range of different foods from each food group should be ate, 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 know that many food and drinks we do not expect to contain sugar actually do; we call these 'hidden sugars'

Dovedale Primary School
Long term plan

Design & Technology

Summer

Title: Making a moving monster.

Vocab: Evaluation, Lever, Linear motion, Linkage, Mechanical, Motion, Oscillating motion, Output, Pivot, Reciprocating motion, Rotary motion.

Required prior knowledge

Children should know:

Design

Explaining how to adapt mechanisms, using bridges or guides to control the movement.
Designing a product for a given audience.

Make

Following a design to create moving models that use levers and sliders.
How to adapt mechanisms, using bridges or guides to control the movement.

Evaluate

Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.

Technical

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 restricts the movement of the slider.

End point

Design

- Creating a class design criteria for a moving monster
- Designing a moving monster for a specific audience in accordance with a design criteria

Make

- Making linkages using card for levers and split pins for pivots
- Experimenting with linkages adjusting the widths, lengths and thicknesses of card used
- Cutting card and assembling components

Evaluate

- Evaluating own designs against a design criteria
- Using peer feedback to modify a final design

Technical

- 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 can turn on a pivot
- To know that a linkage mechanism is made up of a series of levers

Additional

- To know some real-life objects that contain mechanisms

Dovedale Primary School
Long term plan

Design & Technology

Y3	Autumn	
	Title: Making a cushion	**Vocab: Accurate, Applique, Cross-stitch, Cushion, Decorate, Fabric, Patch, Running stitch, Seam, Stencil, Stuffing, Template**
	Required prior knowledge **Children should know:** **Design** Design a suitable product for a target audience. Choose suitable appliques for a target audience. Design using appropriate soft materials. Design for a purpose. **Make** Selecting and cutting fabrics for sewing with support. Threading a needle with support. Sewing running stitch, with evenly spaced, neat, even stitches to join fabric, with support. Neatly pinning and cutting fabric using a template with support. **Evaluate** Discussing evenly place stitches. Identify if appliques are attached appropriately and safely for the target audience Discuss improvements for next time **Technical** 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.	**End point** **Design** • Designing and making a template from an existing cushion and applying individual design criteria **Make** • Following design criteria to create a cushion • 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 **Evaluate** • Evaluating an end product and thinking of other ways in which to create similar items. • Discuss how improvements could be made **Additional** •To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric •To know that when two edges of fabric have been joined together it is called a seam •To know that it is important to leave space on the fabric for the seam •To understand that some products are turned inside out after sewing so the stitching is hidden

Dovedale Primary School
Long term plan

Design & Technology

Spring

Title: Making tarts

Vocab: Climate, Exported, Imported, Mediterranean climate, Nationality, Nutrients, Seasonal food, Temperate climate, Tropical climate

Required prior knowledge

Children should know:

Design

Designing using a food combination which work well together.
Design food packaging

Make

Slicing food safely using the bridge or claw grip.
Choosing a suitable amount of ingredients
Following a recipe with support

Evaluate

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.

Cooking 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 that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.
To understand that we should eat a range of different foods from each food group, and roughly how much
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 know that many foods and drinks we do not expect to contain sugar, do; we call these 'hidden sugars'.

End point

Designing

- Designing a tart within a given budget
- Design food packaging for a target audience
- Choose a tart filling based on their taste preference

Make

- Following a baking recipe
- Cooking safely, following basic hygiene rules
- Adapting a recipe
- Use the bridge or claw grip to chop, slice or dice ingredients
- Measure ingredients

Evaluate

- Evaluating a recipe, considering taste, smell, texture and appearance
- Describing the impact of the budget on the selection of ingredients
- Evaluating and comparing a range of products
- Suggesting modifications

Cooking and nutrition

- To know that the amount of an ingredient in a recipe is known as the 'quantity'
- To know that it is important to use oven gloves when removing hot food from an oven
- To understand the importance of budgeting while planning a recipe
- To understand why we use seasonal fruits and vegetables
- To know where to find the nutritional information on packaging.

Dovedale Primary School
Long term plan

Design & Technology

Summer

Title: Pneumatic toys

Vocab: Exploded diagram, Function, Input, Lever, Linkage, Mechanism, Motion, Output, Pivot, Pneumatic system, Thumbnail sketch

Required prior knowledge

Children should know:

Design

Creating a class design criteria.
Designing a product for a specific audience in accordance with a design criteria.

Make

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.

Evaluate

Evaluating own designs against design criteria.
Using peer feedback to modify a final design.

Technical

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

To know some real-life objects that contain mechanisms.

End point

Design

- Designing a toy which uses a pneumatic system
- Developing design criteria from a design brief based on existing products
- Generating ideas using sketches and diagrams
- Learning that different types of drawings are used in design to explain ideas clearly

Make

- Creating a pneumatic system to create a desired motion
- Building secure housing for a pneumatic system
- Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy
- Selecting materials due to their functional and aesthetic characteristics
- Manipulating materials to create different effects by cutting, creasing, folding, weaving

Evaluate

- Using the views of others to improve designs
- Testing and modifying the outcome, suggesting improvements
- Understanding the purpose of diagrams through the eyes of a designer and their target audience
- Peer evaluate suggesting two positives and an element to improve

Technical

- To understand how pneumatic systems work
- To understand that pneumatic systems can be used as part of a mechanism
- To know that pneumatic systems operate by drawing in, releasing and compressing air

Additional

- To understand how sketches, drawings and diagrams can be used to communicate design ideas
- To know that diagrams are used to show how different parts of a product fit together
- To know that thumbnail sketches are small drawings to get ideas down on paper quickly

Dovedale Primary School
Long term plan

Design & Technology

Y4	Autumn	
	Title: Making a torch	**Vocab: Battery, Bulb, Buzzer, Cell, Component, Conductor, Function, Insulator, Series circuit, Switch, Test, Torch, Wire**
	Required prior knowledge **Children should know:** **Design** Learning the importance of a clear design criteria. Use existing products to influence a personal design. **Make** Making a simple circuit through prior knowledge from science lessons. **Evaluate** Discuss and write about a final product. Evaluating a simple circuit. Suggest points for improvements. **Technical** To know the vital components of a simple circuit. To begin to understand that without the vital components, the flow of electricity will be affected. 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 **Additional** To know that electrical circuits power electrical devices. To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison	**End point** **Designing** • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas **Make** • Making a torch with a working electrical circuit and switch • Using appropriate equipment to cut and attach materials • Assembling a torch according to the design and success criteria **Evaluate** • Testing and evaluating the success of a final product • Discuss difficulties encountered • Write up areas of success and elements they would change • Peer evaluate suggesting two positives and an area of improvement **Technical** •Talk about the reason torches have switches • Discuss why some torches use push switches whilst others use slide switches **Additional** • To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens

Dovedale Primary School
Long term plan

Design & Technology

Spring

Title: Making a slingshot car

Vocab: **Aesthetic, Air resistance, Chassis, Function, Graphics, Kinetic energy, Mechanism, Net**

Required prior knowledge

Children should know:

Design

Developing design criteria from a design brief.
Generating ideas using thumbnail sketches and diagrams.
Use prior knowledge of existing products to create a personal design.

Make

Creating a system to create a desired motion.
Selecting materials due to their functional and how they look.
Manipulating materials to create different effects by cutting, creasing, folding, and weaving.

Evaluate

Using the views of others to improve designs.
Testing and modifying the outcome, suggesting improvements.
Understanding the purpose of diagrams through the eyes of a designer and the target audience.

Technical

To understand that force is used to create movement.

Additional

To understand how sketches, drawings and diagrams can be used to communicate design ideas.
To know that exploded diagrams are used to show how different parts of a product fit together.
To know that thumbnail sketches are small drawings to get ideas down on paper quickly.

End point

Design

- Designing a shape that reduces air resistance
- Drawing a net to create a structure from
- Choosing shapes that increase or decrease speed as a result of air resistance
- Personalising a design

Making

- Measuring, marking, cutting and assembling with increasing accuracy
- Making a model based on a chosen design
- Use hot glue to attach wooden components

Evaluate

- Evaluating the speed of a final product based on the effect of shape on speed and the accuracy of workmanship on performance
- Explain areas of success and areas of improvements.
- Peer evaluate

Technical

- 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.

Additional

- To know that aesthetics means how an object or product looks in design and technology
- To know that a birds-eye view means a view from a high angle (as if a bird in flight)
- To know that graphics are images which are designed to explain or advertise something

Dovedale Primary School
Long term plan

Design & Technology

Summer

Title: Biscuit bake off

Vocab: Adapt, Budget, Cooling rack, Creaming, Ingredients, Method, Net, Packaging, Prototype, Quantity, Recipe, Rubbing, Sieving.

Required prior knowledge

Children should know:

Design

Creating a recipe using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.
Design appealing packaging for a target audience.

Make

Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination.
Following the instructions within a recipe.
Use a range of cookery methods.

Evaluate

Establishing and using design criteria to help review dishes.
Describing the benefits of seasonal fruits and vegetables and the impact on the environment.

Cooking and nutrition

To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth.
To know that vegetables and fruit grow in certain seasons.
To know that cooking instructions are known as a recipe.
To know that imported food is food which has been brought into the country.
To know that exported food is food which has been sent to another country.
To understand that imported foods travel from far away and this can negatively impact the environment.
To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre.
To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health.
To know safety rules for using, storing and cleaning a knife safely.

End point

Design

- Designing a biscuit within a given budget
- Choose ingredients based on personal preference from test testing.
- Design appealing packaging for a target audience

Making

- Following a baking recipe and making small adaptations to suit their ingredients
- Cooking safely, following basic hygiene rules
- Use a range of baking methods e.g creaming, mixing, combining
- Measure ingredients accurately

Evaluate

- Evaluating a recipe, considering: taste, smell, texture and appearance
- Describing the impact of the budget on the selection of ingredients
- Evaluating and comparing a range of products
- Suggesting modifications
- Peer evaluation

Cooking and nutrition

- To know that the amount of an ingredient in a recipe is known as the 'quantity'
- To know that it is important to use oven gloves when removing hot food from an oven
- To know the following cooking techniques: sieving, creaming, rubbing method, cooling
- To understand the importance of budgeting while planning ingredients for biscuits

Dovedale Primary School
Long term plan

Design & Technology

Y5	Autumn	
	Title: Making a healthy Bolognese	**Vocab: Beef, Reared, Processed, Ethical, Diet, Ingredients, Farm, Recipe, Nutrients, Research.**
	Required prior knowledge **Children should know:** **Design** Designing a food product within a given budget, drawing upon previous taste testing. Design appealing packaging for a target audience. **Make** Cooking safely, following basic hygiene rules. Adapting a recipe. Using cooking or baking methods to bring ingredients together. Using kitchen equipment appropriately and safely. **Evaluate** Evaluating a recipe, considering taste, smell, texture and appearance. Describing the impact of the budget on the selection of ingredients. Evaluating and comparing a range of products and suggesting modifications. **Cooking and nutrition** To know that the amount of an ingredient in a recipe is known as the 'quantity'. To know that it is important to use oven gloves when removing hot food from an oven. To understand the importance of budgeting.	**End point** **Design** • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients • Writing an amended method for a recipe to incorporate the relevant changes to ingredients • Designing appealing packaging to reflect a recipe **Make** • Cutting and preparing vegetables safely • Using equipment safely, including knives, hot pans and hobs • Knowing how to avoid cross-contamination • Following a step-by-step method carefully to make a recipe **Evaluate** • Identifying the nutritional differences between different products and recipes • Identifying and describing healthy benefits of food groups • Explain the impact the adaptions have had and if any further adaptions should be made to enhance the taste **Cooking and nutrition** • To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues • To know that a recipe can be adapted to make it healthier by substituting ingredients • To know that a nutritional calculator can be used to identify how healthy a food option is • To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects

Dovedale Primary School
Long term plan

Design & Technology

Spring

Title: Making a stuffed animal

Vocab: accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template

Required prior knowledge

Children should know:

Design

• Designing and making a template from an existing cushion and applying
individual design criteria

Make

• Following design criteria to create a cushion
• 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

Evaluate

• Evaluating an end product and thinking of other ways in which to create similar items.
• Discuss how improvements could be made.

Additional

•To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric
•To know that when two edges of fabric have been joined together it is called a
seam
•To know that it is important to leave space on the fabric for the seam
•To understand that some products are turned inside out after sewing so the stitching is hidden

End point

Design

• Designing a stuffed animal considering the main component shapes requires and creating an appropriate template.
Consider the proportions of the individual components.

Make

• Follow design criteria to create 3D stuffed animal.
• Measuring, marking and cutting fabric accurately and independently.
• Threading needles independently
• Tying knots independently
• Sewing cross stitch and blanket stitch to join fabric (ensuring the spaces between stitches are even and regular)
• Using appliqué to enhance features of the animal eg facial features.
• Completing design ideas with stuffing and sewing the edges.

Evaluate

• Testing and evaluating an end product and thinking of other ways in which to create similar items.
• Discuss how improvements could be made.
To test that the edges of the fabric is reinforced by the blanket stitch.
Discuss how simpler designs are easier to finish to a high standard.

Technical

• To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds stuffing securely.
To know that soft toys are often made by creating appendages separately and then attaching them to the main body.

Additional

• To know that there are a variety of other stitches that are suitable for different outcomes.

Dovedale Primary School
Long term plan

Design & Technology

Summer

Title: Making a truss bridge.

Vocab: Beam bridge, Arch bridge, Truss bridge, Strength, Corrugation, Stiff, Lamination, Rigid, Factors, Stability.

Required prior knowledge

Children should know:

Design

Learning the importance of a clear design criteria.
Including individual preferences and requirements in a design.
Choosing suitable materials and aesthetics for a target audience

Make

Making stable structures from card, tape and glue.
Following instructions to cut and assemble the supporting structure.

Evaluate

Evaluating a product according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't.
Suggest points for improvements.

Technical

To understand that the shape of materials can be changed to improve the strength and stiffness of structures.
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

To know that design criteria is a list of points to ensure the product meets the target audience needs and wants.

End point

Design

- Designing a stable structure that is able to support weight
- Creating frame structure with focus on triangulation

Make

- Making a range of different shaped beam bridges
- Using triangles to create truss bridges that span a given distance and supports a load
- Building a wooden bridge structure
- Independently measuring and marking wood accurately
- Selecting appropriate tools and equipment for particular tasks.
- Using the correct techniques to saws safely
- Identifying where a structure needs reinforcement and using card corners for support
- Understanding basic wood functional properties

Evaluate

- Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary
- Explaining why selecting appropriating materials is an important part of the design process
- Suggesting points for improvements for own bridges and those designed by others

Technical

- To understand some different ways to reinforce structures
- To understand how triangles can be used to reinforce bridges
- To understand the material (functional and aesthetic) properties of wood

Additional

- To understand the difference between arch, beam, truss and suspension bridges
- To understand how to carry and use a saw safely

Dovedale Primary School
Long term plan

Design & Technology

Y6	Autumn	
	Title: Steady hand game	**Vocab: Assemble, Battery, Battery pack, Buzzer, Circuit, Circuit symbol, Component, Conductor, Copper, Design criteria, Fine motor skills, Fit for purpose, Form, Function, Gross motor skills, Insulator, LED, User**
	Required prior knowledge **Children should know:** **Design** Designing an electronic circuit appropriate for different purposes. Creating a labelled circuit diagram showing positive and negative parts in relation to the LED and the battery. **Make** Making a functional series circuit. Creating, referring to a design criteria. Mapping out where different components of the circuit will go. **Evaluate** Evaluating personal and a peer's product against design criteria and suggesting modifications that could be made to improve the reliability or aesthetics of it. **Technical** To know the key components used to create a functioning circuit. To know that copper is a conductor and can be used as part of a circuit. To understand that breaks in a circuit will stop it from working. To understand that a series circuit only has one path for the electrical current to flow from positive to negative. To know that we use symbols to represent components in a circuit diagram. To know the names of the components in a basic series circuit: crocodile wires, LED (light-emitting diode), battery holder, battery, cell.	**End point** **Design** • 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 **Make** • 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 • Shaping a malleable metal material **Evaluate** • Testing own and others finished games, identifying what went well and making suggestions for improvement being critical against the design criteria **Technical** • To know that batteries contain acid, which can be dangerous if they leak, therefore they need to be enclosed effectively to be suitable for a young target audience **Additional** • To understand the diagram perspectives 'top view', 'side view' and 'back'

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Long term plan

Design & Technology

Spring

Title: Playground

Vocab: Adapt, Apparatus, Jelutong, Landscape, Mark out, Measure, Modify, Natural materials, Plan view, Playground, Prototype, Reinforce

Required prior knowledge

Children should know:

Design

Designing a stable structure that can support weight.
Creating frame structure with focus on triangulation.
Explaining why selecting appropriating materials is an important part of the design process.

Make

Independently measuring and marking materials accurately.
Selecting appropriate tools and equipment for particular tasks
Using the correct techniques to saw safely.
Identifying where a structure needs reinforcement and using card corners for support.
Understanding basic material functional properties.

Evaluate

Adapting and improving own and peer's structure by identifying points of weakness and reinforcing them as necessary.
Suggesting points for improvements.

Technical

To understand some different ways to reinforce structures.
To understand how triangles can be used to reinforce bridges.
To know that properties are words that describe the form and function of materials.
To understand why material selection is important based on their properties.
To understand material (functional and aesthetic) properties

Additional

To understand the difference between arch, beam, truss and suspension bridges.
To understand how to carry and use a saw safely.

End point

Design

• Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs
• Design structures based on known playground features

Make

• Building a range of play apparatus structures drawing upon new and prior knowledge of structures
• Measuring, marking and cutting materials to create a range of structures
• Using a range of materials to reinforce and add decoration to structures

Evaluate

• 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 and what modifications are needed to improve the final outcome

Technical

• To know that structures can be strengthened by manipulating materials and shapes

Additional

• To understand what a 'footprint plan' is
• To know that a prototype is a cheap model to test a design idea

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Summer

Title: Come dine with me

Vocab: Accompaniment, Collaboration, Cross-contamination, Farm, Equipment, Flavour, Preparation, Target audience

Required prior knowledge

Children should know:

Design

Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.

Writing an amended method for a recipe to incorporate the relevant changes to ingredients.

Designing appealing packaging to reflect a recipe.

Make

Cutting and preparing food safely.

Using equipment safely, including knives, hot pans and hobs.

Knowing how to avoid cross-contamination.

Following a step-by-step method carefully to make a recipe.

Evaluate

Identifying the nutritional differences between different products and recipes.

Identifying and describing healthy benefits of food groups.

Cooking and nutrition

To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues.

To know that a recipe can be adapted to make it healthier by substituting ingredients.

To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.

End point

Design

- Writing a recipe, explaining the key steps, method and ingredients
- Including facts and drawings from research undertaken
- Choosing suitable food for a starter, main and dessert
- Design an appealing menu

Make

- 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
- Using cooking and baking methods with independence

Evaluate

- 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

Cooking and nutrition

- To know that many countries have 'national dishes' which are recipes associated with that country
- To know that 'processed food' means food that has been put through multiple changes in a factory
- To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides
- To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork)