Expressive Arts and Design - DT Nursery

Key Vocabulary	**Definition**
Junk materials	Boxes, lids, packaging that has been used before

As a 2/3 year old I will be able to :

Explore different materials including fabrics, 'junk' materials and construction kits

Sometimes have a purpose for what I want to make, with an adult helping me decide, if I need it

Join things together by stacking them or sticking them with glue or tape

Show an adult what I have made

By the end of Nursery I will be able to

Make a model choosing materials from a selection that have been set out for me, such as paper, card, 'junk' materials, for example a car or a tower

Join my materials with Pritt stick, PVA glue or masking tape to make my model, asking for help if needed

Build with construction kits, such as Duplo and wooden blocks

Talk to an adult about what I have made

As a 2/3 Year old I need to know:

If I put flat objects on top of each other they will stack and I can build them higher

I can use tape and glue to stick things together

I can ask an adult if I need help

By the end of Nursery I need to know:

I can join materials together by using Pritt stick, PVA glue or masking tape

I can use child scissors to cut some materials but I might need an adult to help me cut thicker/stronger materials

Construction kits	Kits that can be used to build or make models with

Expressive Arts and Design - DT Reception

Key Vocabulary	**Definition**
Construction kits	Kits that can be used to build or make models with
Recycled materials	Boxes, lids and packaging that can be reused for another purpose
Junk modelling	Making a model using recycled materials
Technique	A way of doing something

I need to know:

Pritt stick, PVA glue, sellotape, masking tape, paperclips and split pins can all be used to join different materials

Materials can also be joined by bending, folding or twisting

Not all materials can be joined in the same way so I may have to use different techniques/resources

Recycled materials can be used for making models

Scissors are sharp so I need to handle them carefully when I am cutting

By the end of Reception I will be able to :

Use various construction kits to make different models, choosing the most appropriate for the purpose, for example Mobilo for a fire engine or Lego for a house

Choose what to use from a range of materials such as paper, card, recycled materials and fabrics in order to build my planned model or item, for example a vehicle, a house or a bag

Choose how to join my materials from either Pritt stick glue, PVA glue, sellotape, masking tape, paperclips, split pins or by folding, twisting or bending the materials

Use scissors or tearing to change the shape and/or size of my material and make it the right size for what I need by comparing

Talk about what I am making as I go along and discuss any possible problems and how to solve them with an adult

Say what I like or dislike about my model when it is finished and, with support, think about if I would change anything next time

Links to prior learning:

Using construction kits in Nursery

'Junk modelling' in Nursery

DT Year 1 Structures : Free standing structures - 'Houses' Autumn Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Construct	Build, set up, make something
Structure	Anything that is built/constructed from different connected parts
Materials	What something is made from
Framework	An important supporting structure of a building
Surface	The outside or top of something
Base	Something upon which a structure is built or rests upon

I need to know:

How to make freestanding structures stronger, stiffer and more stable.

And use technical vocabulary relevant to the project

That Isambard Kingdom Brunel was an engineer of a local structure, the Royal Albert Bridge, Plymouth/ Saltash. He also built railways and ships.

By the end of this unit I will be able to :

Design

- Generate ideas for a house based on my own and other people's experiences and from the story of 'The Three Little Pigs', simple design criteria, explaining what I could make.
- Develop, model and communicate my ideas through talking, mock-ups and drawings.

Make

- Plan by suggesting what to do next.
- Select and use tools, skills and techniques, explaining my choices.
- Select new and reclaimed materials and construction kits to build my structures.
- Use simple finishing techniques suitable for the structure I have created.

Evaluate

- Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.
- Evaluate my house by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

Links to prior learning:

'Junk modelling' in Reception and Nursery

Building with construction kits in Reception and Nursery

DT Year 1 Food : Preparing fruit & vegetables - Fruit smoothies/kebabs Spring Term

Key Vocabulary	**Definition**
Healthy foods	Those which are good for our body, teeth and health
Fruit	Something that grows on a plant/ tree/bush that has a seed or stone covered in something you can eat
Kebab	Kebab – cooked and/or fresh ingredients on a skewer.
Smoothie	A thick, smooth drink of fresh fruit mixed with juice, milk, yogurt or ice cream
Pith	The soft white lining inside fruit such as oranges.
Flesh	The part of a fruit under the skin which can be eaten
Peel	Remove the outer layer or skin of some foods
Slice	To cut into thin pieces
Core	To take out the core or centre of a piece of fruit

I need to know:

- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.
- Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit is part of *The Eatwell Guide*.
- And use technical and sensory vocabulary relevant to the project.

By the end of this unit I will be able to :

Design

- Design an appealing fruit smoothie or fruit kebab for a particular user based on simple design criteria.
- Generate initial ideas and design criteria through investigating a variety of fruit.
- Communicate these ideas through talk and drawings.

Make

- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze and chop safely.
- Select from a range of fruit according to their characteristics e.g. colour, texture and taste, to create my fruit smoothie or kebab.

Evaluate

- Taste and evaluate a range of fruit to determine the intended user's preferences.

Links to prior learning:

Discussion about the importance of healthy lifestyles in Reception and Nursery (in PSED)

Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.

Experience of cutting soft fruit and vegetables using appropriate utensils

DT Year 1 Mechanisms : Levers and Sliders - 'Moving Air Transport' picture Summer Term

Key Vocabulary	**Definition**
Slider	A rigid bar which moves backwards and forwards along a straight line.
Lever	A rigid bar which moves around a pivot.
Pivot	The centre point where something can turn
Slot	The hole through which a lever or slider is placed to enable part of a picture to move.
Guide or bridge	A short card strip used to keep sliders in place and control movement.

I need to know:

- Explore and use sliders and levers.
- Understand that different mechanisms produce different types of movement.
- Know and use technical vocabulary relevant to the project.

By the end of this unit I will be able to:

Design

- Generate ideas based on simple design criteria and my own experiences, explaining what I could make.
- Develop, model and communicate my ideas through drawings and mock-ups with card and paper.

Make

- Plan by suggesting what to do next.
- Select and use tools, explaining my choices, to cut, shape and join paper and card.
- Use simple finishing techniques suitable for my moving transport picture

Evaluate

- Explore a range of existing books, pictures and everyday products that use simple sliders and levers.
- Evaluate my picture by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

Links to prior learning:

- Early experiences of working with paper and card to make simple flaps and hinges.
- Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape.

Exploring different materials in Reception and Nursery

DT Year 2 Mechanisms : Wheels and Axels - 'Emergency Vehicle' Autumn Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Mechanism	A system of parts working together to make something move
Axle	The stick/rod that connects the wheels on a vehicle
Dowling	Small, round evenly cut pieces of wood
Chassis	The frame or base on which a vehicle is built.
Friction	Friction – resistance that happens

I need to know:

- Explore and use wheels, axles and axle holders.
- The difference between fixed and freely moving axles.

	when two things rub together.

By the end of this unit I will be able to :

Design

- Generate initial ideas and simple design criteria for my emergency vehicle by talking, looking at toy vehicles, pictures of vehicles and my experiences of seeing any such vehicles
- Develop and communicate ideas through drawings and mock-ups

Make

- Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.
- Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.

Evaluate

- Explore and evaluate a range of products with wheels and axles.
- Evaluate my ideas throughout and my vehicle against original criteria.

Links to prior learning:

Using card, measuring, marking and cutting out materials to make a house made in Year 1 Autumn term

Assembling vehicles with moving wheels using construction kits.

Exploring moving vehicles through play.

Gained some experience of designing, making and evaluating products for a specified user and purpose.

Developed some cutting, joining and finishing skills with card

DT Year 2 Food : Preparing fruit & vegetables - 'Indian Dish' Spring Term

Key Vocabulary	**Definition**
Healthy Foods	Those which are good for our body, teeth and health
Aloo Pakora	An Indian dish made from potatoes
Vegetable	A plant or part of a plant that can be eaten
Ingredients	The different foods or substances that are put together to make a meal
Weigh	Measure ingredients to identified amounts
Peel	Remove the outer layer or skin of some foods
Slice	Thinly cut food items
Coat	Cover a food item usually with egg/milk/flour/breadcrumbs/spices

I need to know:

Aloo Pakora are soft fried potato discs or fritters coated in a crispy batter or breadcrumbs from India

I can follow a recipe for how to make my Aloo Pakora, but I can change some of the spices to suit the taste of the person I am making it for

Where different food comes from (trees, plants, animals) - potatoes grow underground, flour comes from wheat and cumin and coriander are plants

Understand and use basic principles of a healthy and varied diet to prepare dishes, including how vegetables are part of *The Eatwell Guide*.

And use technical and sensory vocabulary relevant to the project.

*T*he chef Asma Khan is a female Indian chef now living and working in Britain. She only employs females in her restaurant*, 'Chefs for Impact'.*

By the end of this unit I will be able to :

Design

Think of ideas for my Indian dish, Aloo Pakora, using what I have learnt about India and Delhi in Geography

Generate initial ideas and design criteria through investigating a variety of vegetables and spices.

Communicate these ideas through talk and drawings.

Make

Use simple utensils and equipment to e.g. peel, cut, slice, grate and chop safely.

Select from a range of spices and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.

Evaluate

Taste and evaluate a range of spices and vegetables to determine the intended user's preferences.

Evaluate ideas and finished products against design criteria, including intended user and purpose.

Links to prior learning:

Making a fruit smoothie/kebab in Year 1 Summer term

Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.

Experience of cutting soft fruit and vegetables using appropriate utensils.

DT Year 2 Textiles : Templates and Joining - 'Faces' Summer Term

Key Vocabulary	**Definition**
Felt	A fabric made from pressed wool which is soft and strong
Template	The pattern or shape that can be used to draw or cut around on a different material
Sew	To join pieces of fabric with stitches.
Running stitch	A line of small even stitches that run in and out through the cloth without overlapping

I need to know:

Pablo Picasso was an early 20th century artist who is famous for his abstract images (images that are not realistic).

How simple 3-D textile products are made, using a template to create two identical shapes.

How to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.

About different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.

And use technical vocabulary relevant to the project.

By the end of this unit I will be able to :

Design

- Design a functional and appealing product for a chosen user and purpose based on simple design criteria.

Think of ideas for my felt face by looking at Picasso's abstract faces and my own face pictures created in art

- Generate, develop, model and communicate my ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.

Make

- Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.
- Select from and use textiles according to their characteristics.

Evaluate

- Explore and evaluate a range of existing textile products relevant to my felt face picture.
- Evaluate my ideas throughout and my felt face picture against original design criteria.

Links to prior learning:

- Explored and used different fabrics.
- Cut and joined fabrics with simple techniques.
- Thought about the user and purpose of products

DT Year 3 Food : Healthy and Varied Diet - Wraps/Toasties Autumn Term

Key Vocabulary	**Definition**
Ingredients	The food items you need to make a food dish
Preference test	Trying different foods and deciding which you like best.
Sensory evaluation	Evaluating food products in terms of the taste, smell, texture and appearance.
Texture	How the product feels in the mouth.
Appearance	How the food looks
Processed Food	Ingredients that have been changed in some way to enable them to be eaten or used in food preparation and cooking.

I need to know:

Know how to use appropriate equipment and utensils to prepare and combine food.

Know about a range of fresh and processed ingredients appropriate for the filling of a wrap or toasted sandwich and whether they are grown, reared or caught.

By the end of this unit I will be able to :

Design

Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing wrap or toastie for my lunch.

Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Make

Plan the main stages of a recipe, listing ingredients, utensils and equipment.

Select and use appropriate utensils and equipment to prepare and combine ingredients.

Select from a range of ingredients to make an appropriate wrap or toastie, thinking about sensory characteristics.

Evaluating

Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.

Evaluate the ongoing work and the final wrap or toastie with reference to the design criteria and the views of others.

Links to prior learning:

Preparing a fruit kebab/smoothie in Year 1 Summer term

Making Aloo Pakora (Indian coated potato slices) in Year 2 Autumn term

Knowing some ways to prepare ingredients safely and hygienically.

Having some basic knowledge and understanding about healthy eating and *The Eatwell Guide.*

Having used some equipment and utensils and prepared and combined ingredients to make a product.

DT Year 3 Electrical Systems : Simple circuits & switches - Light Box Spring Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Circuit	Path through which electricity passes
Conductor	A material which allows an electric current to pass through it
Insulator	A material which does not easily allow electric current to pass through it
Prototype	A model made to test whether a design will work
Push to break/make switch	A switch turned off/on by pressing it

I need to know:

A light box is a structure/a 3D shape that contains a light

Understand and how to use electrical systems in products, such as series circuits incorporating switches, bulbs and buzzers.

And use technical vocabulary relevant to this project.

Key individuals and events in time, such as the invention of the light bulb by the American Thomas Edison and Cornishman Humphry Davy and his miner's safety lamp

Reed switch	A switch operated by a magnet
Toggle switch	A switch operated when a lever is pressed.

By the end of this unit I will be able to :

Design

- Gather information about needs and wants, and develop design criteria to inform the design of my light box that is fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.

Make

- Order the main stages of making.
- Select from and use tools and equipment to cut, shape, join and finish with some accuracy.
- Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.

Evaluate

- Investigate and analyse a range of existing battery-powered products.
- Evaluate my ideas and products against my own design criteria and identify the strengths and areas for improvement in my work.

Links to prior learning:

- Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers.
- Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue

DT Year 3 Structures : Shell Structures - ‘Keep Sake’ Box Summer Term

Key Vocabulary	**Definition**
Shell structure	A hollow structure with a thin outer covering
Vertex	Used to refer to the corners of a solid geometric shape, where edges meet.
Cuboid	A solid body with rectangular sides.
Prism	A solid geometric shape with ends that are similar, equal and parallel.
Edge	Where two surfaces meet at an angle
Face	A surface of a geometric shape

I need to know:

- Develop and use knowledge of how to construct strong, stiff shell structures.
- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.
- And use technical vocabulary relevant to this project.

By the end of this unit I will be able to :

Design

- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.
- Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.

Make

- Order the main stages of making.
- Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy.
- Explain my choice of materials according to functional properties and aesthetic qualities.
- Use finishing techniques suitable for the 'Keepsake' box I am creating.

Evaluate

- Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.
- Test and evaluate my 'keepsake' box against design criteria and the intended user and purpose.

Links to prior learning:

Experience of using different joining, cutting and finishing techniques with paper and card.

A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science

Building a house structure in Y1 Autumn term

Building a light box in Y3 Autumn term

DT Year 4 Food : Healthy and Varied Diet - Fruit Crumble Autumn Term

Key Vocabulary	**Definition**
Ingredients	The food items you need to make a food dish
Preference test	Trying different foods and deciding which you like best.
Sensory evaluation	Evaluating food products in terms of the taste, smell, texture and appearance.
Texture	How the product feels in the mouth.
Appearance	How the food looks
Rubbing in	A technique where flour is rubbed into a fat to make dishes such as crumbles
Simmering	Cooking using a medium heat to gently soften foods

I need to know:

- How to use appropriate equipment and utensils to prepare and combine food.
- About a range of fresh and processed ingredients appropriate for my fruit crumble, and whether they are grown, reared or caught.
- And use relevant technical and sensory vocabulary appropriately.

By the end of this unit I will be able to :

Design

- Generate and clarify ideas through discussion with my peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing fruit crumble for my family.
- Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Make

- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics

Evaluate

- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
- Evaluate the ongoing work and the final fruit crumble with reference to the design criteria and the views of my family

Links to prior learning:

Preparing a fruit kebab/smoothie in Year 1 Summer term

Making Aloo Pakora (Indian coated potato slices) in Year 2 Autumn term

Making a lunch wrap/toastie in Year 3 Autumn term

Knowing some ways to prepare ingredients safely and hygienically.

Having some basic knowledge and understanding about healthy eating and *The Eatwell Guide.*

DT Year 4 Textiles : 2D shape to 3D product - Fabric Toy Animal Spring Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Blanket stitch	A straight stitch with another one added at a right angle
Pattern/Template	A shape drawn to the exact shape and size, used to assist cutting out
Seam	A line of stitching that joins pieces of fabrics together
Seam Allowance	Extra fabric allowed for joining together - usually 1.5cm

I need to know:

Blanket stitch is a type of stitch used for sewing the edges of fabrics together and can also be used as a decorative stitch. It will work well for my soft toy as it is strong.

How to strengthen, stiffen and reinforce existing fabrics.

How to securely join two pieces of fabric together.

And understand the need for patterns and seam allowances.

And use technical vocabulary relevant to this project.

That Margarette Steiff made the famous Steiff teddy bears and other soft toys, such as elephants, despite having polio and being paralysed in both legs and having pain in her right arm

By the end of this unit I will be able to :

Design

- Generate realistic ideas through discussion and design criteria for an appealing and functional soft toy fit for purpose and specific user/s.
- Produce annotated sketches, prototypes, final product sketches and pattern pieces.

Make

- Plan the main stages of making.
- Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
- Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

Evaluate

- Investigate a range of 3-D textile toys relevant to this project.
- Test my toy against the original design criteria and with the intended user.
- Take into account others' views.
- Understand how a key event/individual has influenced the development of the soft toy

Links to prior learning:

Using glue to join fabric in simple ways in Reception

Using running stitch to sew features onto a felt face in Year 2 Summer term

Having used simple patterns and templates for marking out.

Having evaluated a range of textile products

DT Year 4 Mechanical Systems : Levers and Linkages Summer Term

I need to know:

A shaduf is a device for lifting water out of a well, river or reservoir. It was invented by the Ancient Egyptians and is still used today, in Egypt, India and other countries. This type of historical engineering helped to shape the world as it was part of an early irrigation system used to water crops

Mummification is the process the Ancient Egyptians used to preserved the bodies of their dead

How lever and linkage mechanisms work.

Key Vocabulary	**Definition**
Prototype	The first, sometimes smaller, model of something which is planned to be made
Shaduf	A hand operated device used for lifting water out of a well, river or reservoir. A large pole balanced on a crossbeam, a rope and bucket on one end and a heavy counter weight at the other. The counter weight helped to offset the weight of the water being lifted.
Mummification	A process in which the skin and flesh of a corpse can be preserved
Mechanism	A device used to create movement in a product
Lever	A rigid bar which moves around a pivot
Linkage	The strips joining one or more levers to produce the type of movement required. The term 'linkage' is also used to describe the lever and linkage mechanism as a whole.

Slot	The hole through which a lever is placed to enable part of a picture to move
Guide or bridge	A short strip used to keep lever and linkage mechanisms in place and control movement
Loose pivot	A paper fastener that joins card strips together
Fixed pivot	A paper fastener that joins card strips to the backing card

By the end of this unit I will be able to :

Design

- Generate realistic ideas and my own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate my ideas.

Make

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the moving picture I am making.

Evaluate

- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Evaluate my own moving picture and ideas against criteria and user needs, as I design and make it

Links to prior learning:

Explored and used mechanisms such as flaps, sliders and levers such as making a moving picture in Y1 Spring term

Cutting, measuring, joining and using finishing techniques in Y2 Spring term, Y3 Spring and Summer terms

DT Year 5 Mechanical Systems : Cams - Moving Olympian Model Autumn Term

Key Vocabulary	**Definition**
Cam mechanism	A mechanism that changes one sort of movement to another
Follower	The device that follows the movement of the cam: a lever or a slider
Guide	A piece of material used to guide the movement of another
Spacer	A piece of material used to create extra space to allow moving parts to move freely
Rotary motion	Movement that goes round
Oscillating motion	Moving to and fro around a pivot point, as in a lever
Reciprocating motion	Backwards and forwards movement in a straight line, as in a slider

I need to know:

A cam mechanism has two parts - the cam and the follower. When the cam rotates, the follower moves up and down

Moving toys often have a cam mechanism

That mechanical systems have an input, process and an output

How cams can be used to produce different types of movement and change the direction of movement

The invention of the cam has helped to shape the world because it is used in so many machines such as engines, a printing press and some moving toys

By the end of this unit I will be able to :

Design

- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide my thinking.
- Develop and communicate my ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

Make

- Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans
- Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluate

- Compare the final product to the original design specification.
- Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve my work.
- Investigate famous manufacturing and engineering products relevant to this project.

Links to prior learning:

Marking, measuring and cutting card, sawing dowling and the use of an axle and wheels when making a vehicle in Year 2 Spring term

Marking, measuring and cutting card when making a light box in Year 3 Spring term

Having a basic understanding of different types of movement such as for moving pictures in Y1 and Y4

Experience of cutting and joining techniques with a range of materials including card, plastic and wood such as for houses in Y1, light boxes in Y3

An understanding of how to strengthen and stiffen structures such as for houses in Y1 and keepsake boxes in Y3

DT Year 5 Structures : Frame Structures - Bird Table/House Spring Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Frame structure	A structure made from thin components e.g. tent frame.
Modelling	The process of making a 3-D representation of a structure or product.
Compression	The application of pressure to squeeze an object.
Strut	A part of a structure under compression
Tension	A force pulling on a material or structure

I need to know:

The type of birds I am trying to attract and consider the size of the table/box in relation to this

How to strengthen, stiffen and reinforce 3-D frameworks.

And use technical vocabulary relevant to this project

Tie	A part of a structure under tension

By the end of this unit I will be able to :

Design

- Carry out research into existing products, using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide the development of my ideas and product, taking account of constraints including time, resources and cost.
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Make

- Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.
- Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Use finishing and decorative techniques suitable for the bird table/box I am designing and making.

Evaluate

- Investigate and evaluate a range of existing frame structures, including bird boxes and tables
- Critically evaluate my own bird table/box against my design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Links to prior learning:

Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials such as for a house in Y1, a vehicle in Y2, a light box in Y3

Basic understanding of what structures are and how they can be made stronger, stiffer and more stable such as for houses in Y1 and keepsake boxes in Y3

DT Year 5 Food : Celebrating Culture and Seasonality - Sicilian Pizzas Summer Term

Key Vocabulary	**Definition**
Authentic recipe	A recipe that is real/true to the country or region it says it is from
Dough	A mixture of flour, yeast and water before it is cooked.
Knead	Stretching, folding and pushing dough to help it rise and make it smooth
Rubbing in	Rubbing the dry ingredients together with the fat, lifting to put air into the mixture, so that it resembles fine breadcrumbs.
Yeast	A tiny plant which makes bubbles of carbon dioxide when mixed with flour and warm water.
Unleavened bread	Flat bread where yeast has not been added.
Finishing	Related to the appearance of the product – shape, decoration and colour.

I need to know:

Sicily is a region of Italy. An authentic Sicilian pizza or sfincione is made with a thick, spongy dough and the main ingredients are tomatoes, onions, anchovies and oregano with breadcrumbs and cheese covering the sauce

How to use utensils and equipment including heat sources to prepare and cook food.

And understand about seasonality in relation to food products and the source of different food products

By the end of this unit I will be able to :

Design

- Generate innovative ideas for my pizza by consulting the adults I will invite to our Italian lunch and by tasting different pizza toppings through research and discussion with peers and to develop a design brief and criteria for my specification.
- Explore a range of initial ideas, and make design decisions to develop my final product linked to my user and purpose.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate my ideas.

Make

- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.
- Make, decorate and present my pizza appropriately for the family lunch

Evaluate

- Carry out sensory evaluations of a range of pizzas and relevant ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
- Evaluate my final pizza with reference back to the design brief and design specification, taking into account the views of my family when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets.

Links to prior learning:

Preparing a fruit kebab/smoothie in Year 1 Summer term

Making Aloo Pakora (Indian coated potato slices) in Year 2 Autumn term

Making a lunchtime wrap/toastie in Year 3 Autumn term

Making a fruit crumble in Year 4 Autumn term

Having knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet.

Being able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.

DT Year 6 Electrical Systems : More complex switches and circuits - WWII Vehicle Autumn Term

Key Vocabulary	**Definition**
Design	Ideas and thoughts about a product
Product	Something that is made
Evaluate	To compare against different criteria, how well a product serves its purpose
Design criteria	The requirements set out when designing something that need to be met when the product is made
Function/Purpose	What something is made/used for
Open/Closed switch	When a switch is positioned such that electricity can/cannot flow through it.
Normally Open/Closed	The term used to describe when a switch is in the on/off position, i.e. the switch is open/closed and electricity/no electricity can flow when the button is not pressed.
Computer control input Output devices	When a switch, such as a micro switch, sends a signal to a computer control box to activate a sequence of events such as a buzzer or light being used Components that produce an

I need to know:

Vehicles in WWII were designed to be strong and sturdy to withstand some form of attack and be long lasting

Mechanical and electrical systems can be used to move my vehicle

How to use electrical systems in my vehicle

How to apply my understanding of computing to program, monitor and control my vehicle

And use technical vocabulary relevant to this project.

	outcome e.g. bulbs and buzzers.
Input devices	Components that are used to control an electrical circuit e.g. switches or sensors.

By the end of this unit I will be able to :

Design

Generate ideas for a vehicle themed on WWII, considering its purpose and my needs, and establish design criteria which informs the innovative and functional design of a successful vehicle

Use research to develop a design specification for a functional WWII vehicle that takes account of constraints including time, resources and cost.

Share and clarify my ideas through discussion.

Communicate my ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.

Make

Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.

Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional vehicle

Create and modify a computer control program to enable an electrical product to work

Evaluate

Continually evaluate and modify the working features of my vehicle to match the initial design specification.

Test the system to demonstrate its effectiveness for the intended user and purpose.

Links to prior learning:

Marking, measuring and cutting card, sawing dowling and the use of an axle and wheels when making a vehicle in Year 2 Spring term

Marking, measuring and cutting card when making a light box in Year 3 Spring term with an electrical circuit

Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product.

Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off.

DT Year 6 Textiles : Using Computer-Aided Design in Textiles - Leaver's Top Spring Term

Key Vocabulary	**Definition**
Visual effect	The way something looks, what it looks like
Working drawing	Detailed drawing contains all information needed to make the product.
Mock up	Quick 3-D modelling using easy to work materials. Useful for checking proportions and scale.
Seam allowance	Extra fabric allowed for joining, usually 15mm.
Specification	Describes what a product has to do.
Tacking	Large running stitches to hold pieces of fabric together temporarily.
CAD	Computer-aided design.
CAM	Computer-aided manufacture.

I need to know:

Clothes can be designed for many reasons and that some parts of the clothing may be functional or purely to add detail or interest

A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.

Some famous fashion designers are Alexander McQueen - British, had shocking, innovative and creative clothing, Vera Wang - American of Chinese descent, now mostly makes wedding dresses for the famous such as Ariana Grande, Tommy Hilfiger - American, sports and casual wear, Duro Olowu - Nigerian born British, clothing uses patterns and textiles inspired by his international background

By the end of this unit I will be able to :

Design

Generate ideas for my leavers' top through research and investigate existing tops, recognising different design features, whether decorative or functional

Develop, model and communicate my ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design.

Design a purposeful, functional, appealing top fit for the intended purpose based on a simple design specification.

Make

Produce detailed lists of equipment and fabrics relevant to my top.

Formulate step-by-step plans

Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluate

Investigate and analyse textile products linked to types of tops

Compare the final top to the original design specification.

Test my top and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

Consider the views of others to improve their work.

Talk about different designers and their style of fashion

Links to prior learning:

Experience of stitching, joining and finishing techniques in textiles such as a felt face in Year 2 Summer term and a soft toy in Year 4 Summer term

Experience of making and using textiles pattern pieces such as for a soft toy in Y4 Summer term

Experience of simple computer-aided design applications.

DT Year 6 Food : Celebrating Culture and Seasonality - Empanadas Summer Term

Key Vocabulary	**Definition**
Empanada	A South American savoury pasty
Glaze	A coating of a glossy substance, often made of egg or milk, brushed over food to give it a shiny look and it can improve the taste and texture of the food covered in it
Crimp	Pinch together or press down the edges of something, such as pastry
Authentic recipe	A recipe that is real/true to the country or region it says it is from
Finishing	Related to the appearance of the product – shape, decoration and colour.

I need to know:

Empanadas are South American pasties that have a savoury filling and can be baked or fried. The name 'empanada' comes from the Spanish verb 'empanar' which means **'**to wrap or cover in bread**'.**

How to use utensils and equipment including heat sources to prepare and cook food.

And understand about seasonality in relation to food products and the source of different food

By the end of this unit I will be able to :

Design

• Generate innovative ideas for my empanadas by consulting the adults I will invite to our South American lunch and by tasting different sweet and savoury pasties

Develop a design brief and criteria for my empanadas specification.

• Explore a range of initial ideas, and make design decisions to develop a final empanadas linked to my user and purpose.

• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

Make

• Write a step-by-step recipe, including a list of ingredients, equipment and utensils

• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.

• Make, decorate and present my empanadas appropriately for my intended user and purpose.

Evaluate

• Carry out sensory evaluations of a range of pasties and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.

• Evaluate my final empanadas with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

• Understand how key chefs have influenced eating habits to promote varied and healthy diets

Links to prior learning:

Preparing a fruit kebab/smoothie in Year 1 Summer term

Making Aloo Pakora (Indian coated potato slices) in Year 2 Autumn term

Making a lunchtime wrap/toasties in Year 3 Autumn term

Making a fruit crumble in Year 4 Autumn term

Making a Sicilian pizza in Year 5 Summer term

Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet.

Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.