Design and Technology

Curriculum Map and Assessment Framework

Design and Technology – EYFS

ELG	Pupil outcomes / Year 1 readiness **Design and Technology knowledge and understanding**	Other opportunities to develop understanding
Use a range of small tools, including scissors, paint brushes and cutlery. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Understanding the importance of healthy food choices.	- I can design a model before making it - I can construct for a purpose, using a variety of resources, including construction kits and 'found materials' - I can select appropriate resources - I can select tools and techniques needed to shape, assemble and join materials - I can evaluate and adapt my work. - I can explain how I created something, talking about the materials and techniques I have used. - I can talk about some foods that are good for me and why - I can prepare a healthy snack - I can make healthy choices regarding the food I eat	Provide opportunities indoors and outdoors to develop understanding of construction, e.g. a builder's yard. Resources readily available for building and constructing using a variety of materials, sizes and shapes Gross motor activities Fine motor and malleable activities Stories about food and healthy eating. Food tasting opportunities. Snack and lunchtime conversations about healthy choices Food preparation and cooking activities.

Core DT Content

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
1	**Core discipline:** Mechanisms **Key Concept:** Sliders and levers	**Core discipline:** Structures **Key Concept:** Freestanding structures	**Core discipline:** Food and nutrition **Key Concept:** Preparing fruit and vegetables	**Core discipline:** Understanding materials **Key Concept:** Selecting materials **CUSP link: Materials**	**Core discipline:** Textiles **Key Concept:** Templates and joining techniques **CUSP link: Hot and cold places**	**Core discipline:** Food and nutrition **Key Concept:** Understanding a recipe
2	**Core discipline:** Textiles **Key Concept:** Exploring shape and texture	**Core discipline:** Food and nutrition **Key Concept:** Following a recipe **CUSP link: Animals, including humans (Keeping healthy)**	**Core discipline:** Mechanisms **Key Concept:** Axles and wheels	**Core discipline:** Understanding materials **Key Concept:** Manipulating materials **CUSP link: Use of everyday materials**	**Core discipline:** Food and nutrition **Key Concept:** Increasing our intake of fruit and vegetables	**Core discipline:** Structures **Key Concept:** Freestanding structures with moving parts
3	**Core discipline:** Textiles **Key Concept:** Combining materials	**Core discipline:** Food and nutrition **Key Concept:** A balanced and varied diet **CUSP link: Animals, including humans**	**Core discipline:** Mechanisms **Key Concept:** Levers and linkages **CUSP link: Forces and magnets**	**Core discipline:** Electrical systems **Key Concept:** Switches and circuits **CUSP link: Light**	**Core discipline:** Food and nutrition **Key Concept:** Adapting a recipe	**Core discipline:** Structures **Key Concept:** Developing strength in structures
4	**Core discipline:** Food and nutrition **Key Concept:** Food choices	**Core discipline:** Mechanisms **Key Concept:** Hinges	**Core discipline:** Electrical systems **Key Concept:** Switches and circuits revisited **CUSP link: Electricity**	**Core discipline:** Structures **Key Concept:** Designing structures	**Core discipline:** Textiles **Key Concept:** Fixings and fastenings	**Core discipline:** Food and nutrition **Key Concept:** Understanding dietary requirements **CUSP link: Animals, including humans (Digestion)**
5	**Core discipline:** Food and nutrition **Key Concept:** Eating seasonally	**Core discipline:** Electrical systems **Key Concept:** Complex switches and circuits	**Core discipline:** Textiles **Key Concept:** Making clothes last longer	**Core discipline:** Mechanisms **Key Concept:** Pulleys **CUSP link: Forces**	**Core discipline:** Structures **Key Concept:** Developing stability in structures	**Core discipline:** Food and nutrition **Key Concept:** Celebrating culture **CUSP link: World countries**
6	**Core discipline:** Food and nutrition **Key Concept:** Eating ethically	**Core discipline:** Mechanisms **Key Concept:** Gears	**Core discipline:** Food and nutrition **Key Concept:** Eating on a budget	**Core discipline:** Structures **Key Concept:** Designing structures revisited	**Core discipline:** Electrical systems **Key Concept:** Complex switches and circuits **CUSP link: Electricity**	**Core discipline:** Textiles **Key Concept:** Sustainable materials

Key Stage 1

<table>
<tr><th colspan="4">Year 1</th></tr>
<tr><th colspan="2">Core Discipline:</th><td colspan="2">Mechanisms</td></tr>
<tr><th colspan="2">Key Concept:</th><td colspan="2">Sliders and Leavers</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 1 Autumn Term

Block A
How can you make a picture move?

In this block, pupils will investigate how sliders work. They will design and make their own card slider product</td>
<td>• Define the terms: slider, push, pull, linear and movement
• Explore sliding mechanisms in greetings cards, interactive books and everyday objects
• Explain the movement and forces involved in sliders: push, pull, linear
• Define the terms: weave and template
• Use scissors and templates to make a paper weave (pattern plate)
• Demonstrate how to make three types of slider mechanism: 1. The slider moves through two slots 2. The slider moves under two bridges 3.
• The slider moves between runners, which are covered by a layer of paper to conceal the mechanism
• Evaluate the movement and effectiveness of each mechanism
• Make decisions about which mechanism is most appropriate, depending on the purpose of the product
• Construct a novelty toy or greetings card which has a movable image
• Make design decisions about who the product is intended for and what its purpose is
• Apply simple construction and design skills Evaluate outcomes</td>
<td>
<table>
<tr><th colspan="4">Working as a Designer</th></tr>
<tr><th>Design</th><th>Make</th><th>Evaluate</th><th>Apply</th></tr>
<tr><td>The art or process of deciding how something will look or work.</td><td>Create something by combining materials or putting parts together.</td><td>Form an opinion of the value or quality of something after careful thought.</td><td>Use something or make something work in a particular situation.</td></tr>
</table>
At the end of this block, pupils will …
<table>
<tr><th>Know:</th><th>Be able to:</th></tr>
<tr><td>Common uses of sliders Different methods to create card sliders How sliders can create simple mechanisms</td><td>Design and make a slider product Evaluate the success of their outcomes and recommend improvements</td></tr>
</table>
</td>
<td>slider
A slider is a rigid bar which moves backwards and forwards along a straight line

slot (noun)
In some sliding mechanisms, narrow cuts (slots) are made for the slider to pass through.

bridge (noun)
In some sliding mechanisms, rectangles of rigid material such as card are attached to a surface to form bridges, under which the slider can pass.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:
• manipulate fabric and yarns by poking, pulling, threading and weaving
• draw around a template
• use scissors to cut along straight and curved lines and around shapes</td>
<td>Technical Language
Push - applying a force to move something away

Pull - applying a force to move something closer

Rigid - stiff and difficult to move or bend</td>
</tr>
</table>

Year 1

Core Discipline:	Structures
Key Concept:	Free Standing Structures

Term and Focus

Year 1 Autumn Term

Block B
How can you stop a tower from toppling over?

In this block, pupils will investigate what needs to be in place so that a structure can remain standing on its own. They will use a range of materials to explore and reason about why The Leaning Tower of Pisa some structures may fall.

Taught Content:

- Explore how the size of a base affects the stability of a tower and how tall it can be built
- Explain what balance means and how balance affects the stability of a tower
- Explain what a foundation is and how this creates stability
- Experiment with combinations of different shaped and sized blocks, positioned in a variety of ways to build a tower
- Evaluate outcomes and draw conclusions about what makes a tower less likely to topple
- Explore different methods of joining cardboard for construction purposes
- Decide which types of joins would be most effective for use in building a tower
- Label types of join and explain how they were made
- Create a design based on knowledge of what makes a tower stable
- Use construction materials such as cardboard to build a freestanding structure
- Identify effective methods and materials that have been used in a construction
- Identify ways in which the stability of a structure can be improved

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:

A freestanding structure is a structure that stands on its own foundation or base without attachment to anything else

Be able to:

Build structures that are freestanding using a range of different materials

End Point Core Knowledge

Tower
A tower is a tall, narrow building or part of a building.

Topple
To topple means to become unsteady and fall.

Lean
To lean means to bend or move from a straight position to a sloping position

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- use scissors
- identify different types of building blocks

Technical Language

Foundation - a layer of stone or concrete etc. that forms the solid underground base of a building

Balance - the ability to keep steady with an equal amount of weight on each side of the body or structure

Perpendicular - forming an angle of 90° with another line or surface

<table>
<tr><th colspan="4">Year 1</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Preparing Fruit and Vegetables</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th colspan="2">Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr><td>Year 1 Spring Term

Block C
How does food affect your sense?

Pupils will learn that eating is a sensory experience. They will learn about the nutritional value of vegetables and why colourful food can be better for you. They will use a range of culinary techniques to create and modify dishes that appeal to the senses</td><td>• Identify the five senses and five key flavours: sweet, salty, sour, bitter and umami
• Explore the ways that eating food stimulates the senses.
• Explain the benefits of eating raw vegetables in a variety of colours.
• Demonstrate techniques for preparing vegetables, such as ribboning
• Use appropriate vocabulary to describe flavours and textures and state preferences
• Discuss what makes food appealing to all our senses.
• Demonstrate how to prepare crudités using the claw and bridge techniques.
• Revisit grating and ribboning.
• Encourage the use of appropriate vocabulary to describe texture and taste and in the evaluation of outcomes.
• Describe the aroma of a range of herbs and spices and explore how marinading affects food.
• Explain caramelisation and explore how this process affects taste.
• Evaluate outcomes, state preferences and make suggestions for adaptations and improvements.</td><td colspan="2">At the end of this block, pupils will …
Know:
Why colourful food can be healthier
How different foods can affect their senses

Be able to:
Peel, chop and grate a selection of vegetables
Modify food to suit their food senses</td><td>Senses
Senses are what the body uses to explore and interact with the world around us: sight, smell, taste, hearing and touch.

Vitamins
Vitamins are a group of natural substances in food that are necessary for the growth and good health of the body

Sensory
Sensory refers to something that relates to the physical senses of touch, smell, taste, hearing and sight.</td></tr>
<tr><td>Curriculum Narrative

Previous Learning</td><td colspan="3">Pupils will already be able to:

• distinguish between fruit and vegetables
• name a range of vegetables
• identify the five senses</td><td>Technical Language
Ribboning - to slice food such as vegetables into long, thin strips

Caramelise - to cook a food that contains sugar so that the food becomes sweet and often brown

Marinade (verb) - to soak food in a seasoned liquid before cooking to change its flavour and / or texture</td></tr>
</table>

Year 1

Core Discipline:	Understanding Materials
Key Concept:	Selecting Materials

Term and Focus

Year 1 Spring Term

Block D
Can you build with bread?

In this block, pupils will be able to identify a range of construction materials. They will investigate how materials can be changed by adding heat or water. They will use a combination of materials to create a small model house.

Taught Content:

- Identify different materials.
- Describe the properties of materials.
- Sort materials according to their properties. Describe how the properties of cement change when water is added, and it is left to dry.
- Identify materials that are suitable and unsuitable for use in construction.
- Explain how the properties of a material can change when heat is added.
- Know how to combine ingredients to create a bonding product.
- Make decisions about the suitability of materials for building
- Make decisions about substances that can be used to bond materials securely
- Explain what makes properties of materials change (adding heat or water)
- Make changes to a design to allow for the limitations of materials used

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Building materials have different properties which enable them to be used for different purposes

Be able to:
Identify, sort and select materials that can be used in construction
Combine materials

End Point Core Knowledge

Construction
Construction is the process of making or building something

Properties
The properties are the qualities or characteristics that something has.

Architect
An architect is a person whose job is designing buildings.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

This block is set in the context of the Yr1 Science unit 'Materials'.

- sort objects according to size, shape and colour
- use a ruler accurately to draw and measure lines
- identify that objects are made from different materials

Technical Language

modify - to change something slightly, especially in order to make it more suitable for a particular purpose

cement (noun) - a grey powder made by burning clay and lime that sets hard when it is mixed with water

solidify - to become solid or to make something solid

Year 1

Core Discipline:	Textiles
Key Concept:	Templates and joining techniques

Term and Focus

Year 1 Summer Term

Block E
How can two squares of fabric keep you warm?

In this unit, pupils will learn how to sew pieces of fabric together to form a pouch. They will be able to name the parts of a needle and may be able to The Bayeux Tapestry (1077) thread it.

Taught Content:

- Introduce and demonstrate a simple running stitch using yarn and darning needles
- Make holes for sewing in a paper plate or piece of cardboard, using a hammer and nail
- Use stitches to outline a word or initial and to add decoration
- Introduce and name a range of open weave fabrics
- Compare the properties of different sewing threads
- Make a record of fabrics and threads used by labelling sewing samples
- Attach two squares of felt using running stitch to create a pouch
- Create a simple monster face using pieces of felt
- Explain the importance of using small stitches and using two lines of running stitch
- Explain why rice is used to fill the pouch and what happens to the rice when the pouch is placed in a microwave Evaluate outcomes

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Fabric can be joined together using a running stitch

The types and names of tools needed for sewing

Be able to:
Create a running stitch
Select tools for sewing

Thread a needle

End Point Core Knowledge

Binca
Binca is a firm canvas fabric with large holes.

Sewing
Sewing involves joining, fastening or repairing something by making stitches with a needle and thread or a sewing machine.

Felt
Felt is a kind of cloth made by rolling and pressing wool. Moisture or heat is also added which causes the fibres to matt together to create a smooth surface

Curriculum Narrative

Previous Learning

Pupils will already be able to:
This block is set in the context of the Yr1 Science unit 'Hot and Cold Places'.

- identify materials such as cardboard, string and polystyrene
- manipulate fabrics and yarns by poking, pulling, threading and weaving

Technical Language

Running stitch - a line of small even stitches which run back and forth through the cloth without overlapping
Attach - to fasten or join one thing to another

Pouch - a small pocket-like bag

Year 1

Core Discipline:	Food and Nutrition
Key Concept:	Understanding and Recipe

Term and Focus

Year 1 Summer Term

Block F
Why are vegetables the best?

In this block, pupils will be provided with opportunities to prepare and sample a wide variety of vegetables. They will learn about the health benefits of eating vegetables daily and will develop knife skills and basic culinary techniques.

Taught Content:

- Explore the health benefits of eating a wide variety of vegetables
- Combine ingredients to create three separate vegetable dips
- Demonstrate methods of preparing vegetables such as blending and dicing
- Prepare and combine a variety of salad vegetables
- Describe flavours and textures and identify flavours and textures that complement each other
- Practise the pane cooking technique of coating food in flour, beaten egg and breadcrumbs
- Explore how cooking vegetables and coating them in breadcrumbs can change their texture and flavour
- Evaluate outcomes using appropriate technical vocabulary

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
The importance of including a range of vegetables in a diet

Be able to:
Peel, grate, season and breadcrumb a range of vegetables

End Point Core Knowledge

Function
Function refers to a special activity or purpose of a person or thing.

Variety
Variety refers to several different sorts of the same thing.

Texture
Texture is the way a surface, substance or piece of cloth feels when you touch it. For example, how rough, smooth, hard or soft it is

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- explain that vegetables contain vitamins and minerals that the body needs
- peel, chop and grate a selection of vegetables
- identify what makes food appealing to all our senses

Technical Language

vitamins - a group of natural substances in food that are necessary for the growth and good health of the body

nutritious - containing many of the substances which help the body to grow

pane - passing food through seasoned flour, beaten egg and white breadcrumbs to give food a coating ready for cooking

Year 2

Core Discipline:	Textiles
Key Concept:	Exploring Shape and Texture

Term and Focus

Year 2 Autumn Term

Block A
How can you repurpose an item of clothing?

In this block, pupils will learn how to use a template to create a simple patchwork by repurposing clothing to create something practical and useful. They will develop their skills using a needle and thread to create small, even stitches.

Taught Content:

- Identify the properties of a range of fabrics Sort fabrics according to specific criteria Explore how fabrics can be repurposed to create patchworks
- Identify geometric shapes that are suitable to make patchworks
- Use a template to create multiple shapes of the same size
- Arrange samples of paper or fabric to create an attractive patchwork design
- Appliqué a cut-out shape onto another piece of fabric
- Thread a needle using a needle threader
- Use an overstitch to join pieces of fabric
- Explore the history of quilt making Attach a card template to pieces of fabric using running stitch
- Use an overstitch to join fabric shapes together securely and neatly
- Create a patchwork by following a specific process

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
How to cut out shapes which have been created by using a template

How to use a range of basic sewing skills

Be able to:
Use a template to transfer a pattern

Cut out and join fabric shapes using a template

End Point Core Knowledge

Patchwork is a type of needlework where small pieces of cloth in different designs, colours or textures are sewn together

Overstitch
An overstitch is a stitch made over an edge or over another stitch.

Repurpose
To repurpose means to change something slightly in order to make it suitable for a different purpose.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- identify parts of a needle and explain the meaning of words such as yarn and thread
- thread a needle independently
- use a running stitch to attach pieces of fabric

Technical Language

Template
a shaped piece of metal, wood, card, plastic or other material used as a pattern for processes such as painting or cutting out

Appliqué
a technique where pieces of fabric are sewn or stuck on to a larger piece to form a picture or pattern

Quilt
fabric made from several layers with a decorative patchwork top layer

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<tr><td colspan="2">Key Concept:</td><td colspan="2">Following a Recipe</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 2 Autumn Term

Block B
What does healthy mean?

In this unit, pupils will consider what being healthy means. They will learn that eating a variety of vegetables provides the body with the nutrients it needs. They will make products that use a range of vegetables and minimally processed foods.</td>
<td>• Introduce pupils to a wide range of salad vegetables, some of which they may be unfamiliar with
• Explain the difference between fresh and processed food and why processed food is less healthy than fresh
• Identify some of the key nutrients in salad vegetables
• Explain that having a healthy diet requires us to eat a range of foods to ensure our bodies receive all the different nutrients it needs
• Make a layered salad with a simple dressing
• Explain why protein is needed by the body and that meat, dairy products and eggs are a major source of this nutrient
• Explain the term free-range and discuss the ethical issues around animal welfare
• Make a quiche using a tortilla wrap as a base
• Explain the difference between white and wholemeal flour
• Explain what fibre is and that the body needs fibre to maintain a healthy digestive system
• Make a healthy alternative to crisps, using pitta bread seasoned with herbs and spices
• Evaluate results</td>
<td colspan="2">At the end of this block, pupils will …
Know:
Why vegetables are so important to our health

What processed foods are

Be able to:
Prepare a range of salad vegetables

Shape and season a bread snack</td>
<td>free-range
The term free-range refers to food that comes from animals who have access to outdoor spaces. It can also refer to animals who have free access to graze or forage for food.

Processed
To process food means to treat raw food in order to change it or preserve it.

Coagulate
If a liquid coagulates, it becomes thick or partly solid.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:
• This block is set in the context of the Yr2 Science unit Animals, including humans.

• name a range of vegetables
• explain why eating vegetables is good for us
• explain what vitamins are
• use the techniques of grating and ribboning</td>
<td>Technical Language
Vitamins - a group of natural substances in food that are necessary for the growth and good health of the body

Protein - a nutrient found in food (such as meat, milk, eggs and beans) that is made up of many amino acids joined together and is a necessary part of the diet

Wholemeal - made from whole grains of wheat, including the husk or outer layer</td>
</tr>
</table>

Year 2

Core Discipline:	Mechanisms
Key Concept:	Axles and Wheels

Term and Focus

Year 2 Spring Term

Block C
Are bigger wheels always better?

In this block, pupils will learn how wheels and axles work together. They will build simple wheel mechanisms. They will explore how the size of the wheel and position of the axles affects the movement of simple vehicles.

Taught Content:

- Explain the terms wheel, axle, axle bearer / holder, chassis
- Assess pupils' understanding of the words centre, position, rotate
- Explore the difference between fixed axles and rotating axles and identify their applications
- Explore, experiment and explain the effects of changing different variables relating to wheels and axles
- Draw conclusions from experimentation about the most effective positioning of wheels and axles
- Identify the advantages and disadvantages of using small wheels or large wheels
- Record findings using annotated sketches, diagrams and sentence
- Use knowledge of wheels and axles to design and make a simple vehicle
- Evaluate vehicles and explain reasoning for design choices

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
How wheels and axles work together

The size and position of wheels affects how they move

Be able to:
Create a simple wheel mechanism

Use wheel mechanisms to propel a simple vehicle

End Point Core Knowledge

Wheel
A wheel is a circular object that rotates on an axle.

Axle
An axle is a rod or spindle (either fixed or rotating) passing through the centre of a wheel or group of wheels.

Axle Holder
An axle holder is the part of a mechanism that holds an axle steady.

Chassis
A chassis is the base frame of a car, carriage or other wheeled vehicle.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- use modelling materials and equipment safely
- use rulers and scissors accurately
- name types of transport

Technical Language

rotate
to move or turn around a fixed point

position
the place where somebody or something is located

centre
the middle point or part of something

Year 2

Core Discipline:	Understanding Materials
Key Concept:	Manipulating Materials

Term and Focus

Year 2 Spring Term

Block D
How can you waterproof a hat?

In this block, pupils will investigate materials to discover whether they absorb or resist water. Pupils will also use wax or oil crayons to create a waterproof coating for a paper hat which they have made by creasing and folding a sheet of paper.

Taught Content:

- Identify features of clothing designed to be suitable for wet weather conditions
- Sort clothing according to their suitability for specific weather conditions
- Carry out a fair test to determine whether materials are waterproof
- Explore what makes feathers waterproof and why this is important
- Identify how boots have been adapted to make them fit for a specific purpose
- Test paper for its water-resistant qualities
- Explore how paper can be folded and creased to create different 3D forms
- Identify how the properties of paper change when folded in a variety of ways
- Test substances for their water-resistant properties and select the most effective
- Evaluate outcomes

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Materials can be modified to become waterproof

Origami comes from the Japanese words: ori – folding and kami – paper

Be able to:
Make paper waterproof

Transform flat paper by folding and creasing to form a hat

End Point Core Knowledge

Manipulate
To manipulate means to control, use or change something with skill.

Flexible
To be flexible means to be able to bend easily without breaking.

Barrier
A barrier is something that keeps people or things apart.

Curriculum Narrative

Previous Learning

Pupils will already be able to:
This block is set in the context of the Yr2 Science unit 'Uses of everyday materials'

- identify properties of materials
- sort materials according to their properties

Technical Language

waterproof - does not let water through or cannot be damaged by water

resist - to not be harmed or damaged by something

absorbent - to take in something easily, especially liquid

<table>
<tr><th colspan="4">Year 2</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Increasing intake of Fruit and Vegetables</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 2 Summer Term

Block E
How healthy is your food?

Pupils will learn how foods that are pre-made and processed can often be unhealthy. This block lets pupils practise skills and make food that will help improve their energy, mood and future health.</td>
<td>• Identify examples of processed and ultra-processed food
• Explore the nutritional value of fresh food in comparison to processed and ultra-processed food
• Identify key nutrients found in healthy food such as vitamins, fibre and protein
• Describe tastes and textures and explain how they can be changed or improved
• Explore the healthy alternatives to processed food that can be made using fresh ingredients
• Explain what starch is
• Explore ways in which the appearance and texture of potatoes can be changed
• Identify the importance of fibre and carbohydrates in a balanced diet
• Explain the importance of nutrients such as protein and calcium which can be found in cheese
• Evaluate outcomes and make suggestions about how the flavour could be altered and improved</td>
<td colspan="2">At the end of this block, pupils will …
Know:
The difference between fresh food and ultra-processed foods

Be able to:
Shape and form ingredients to make delicious food

Use a range of culinary techniques</td>
<td>Ingredients
Ingredients are any of the foods or substances that are combined to make a particular dish.

Fibre
Fibre is the part of food that cannot be broken down by the body and which helps digestion.

Protein
Protein is a nutrient found in food (such as meat, milk, eggs and beans) that is made up of many amino acids joined together and is a necessary part of the diet.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:

• use a knife safely and accurately with control
• explain that vegetables contain vitamins and minerals that the body needs
• use appropriate vocabulary to describe flavours and textures and explain preferences
• use the techniques of grating and ribboning safely and with control</td>
<td>Technical Language

processed - to treat raw food in order to change it or preserve it

vitamins - a group of natural substances in food that are necessary for the growth and good health of the body

starch - a white carbohydrate food substance found in potatoes, flour and rice</td>
</tr>
</table>

Year 2

Core Discipline:	Structures
Key Concept:	Free standing structures with moving parts

Term and Focus	Taught Content:	Disciplinary Knowledge:	End Point Core Knowledge
Year 2 Summer Term **Block F** **How strong is a piece of paper?** In this unit, pupils will discover that they can increase the strength and stability of paper by folding. They will test and record their paper structures and design a paper tower that is at least 50cm tall and can bear a 1kg weight.	• Explore methods of folding to increase the strength of paper • Conduct a fair test • Test the strength of different-shaped paper pillars • Test the strength of folded and corrugated paper • Draw conclusions from results • Make a record of the testing process and findings • Use a combination of folded and flat cards to create a multi-storey tower • Explore how the positioning of folded cards affects the stability of a tower • Design and make a structure according to set criteria • Modify a design in light of test results • Rebuild a structure to incorporate design changes • Evaluate outcomes	**Working as a Designer** **Design**: The art or process of deciding how something will look or work. **Make**: Create something by combining materials or putting parts together. **Evaluate**: Form an opinion of the value or quality of something after careful thought. **Apply**: Use something or make something work in a particular situation. **At the end of this block, pupils will …** **Know:** Paper becomes stronger when it is folded A load is the amount of weight a structure must carry **Be able to:** Fold paper to increase strength and stability Test and record how much weight paper can hold	**Paper** (noun) Paper is a thin, flat material made from crushed wood or cloth, used for writing, printing or drawing on. **Crease** (noun) A crease is a line on cloth or paper where it has been folded or crushed. **Corrugated** The term corrugated is used to describe sheets of paper, cardboard or metal that have parallel rows of folds that look like a series of waves when seen from the edge.

Curriculum Narrative Previous Learning	**Pupils will already be able to:** • build structures that are freestanding using a range of different materials • identify different types of building blocks • explain that a wide base or foundation provides greater stability to a structure	**Technical Language** **pillar** - a strong column made of stone, metal or wood that supports part of a building **storey** - a level of a building **load** - (noun) the amount of weight exerted on a structure

Key Stage 2

<table>
<tr><th colspan="4">Year 3</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Textiles</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Combing Materials</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 3 Autumn Term

Block A
How can you make a box out of cloth?

In this block, pupils will explore ways to stiffen fabric. They will have the opportunity to cover a box with cloth and then go on to create a rigid box out of fabric</td>
<td>

Identify the variables that will change and those that will not in a fair test
Explore a range of solutions that can be applied to a fabric to make it rigid
Draw conclusions from test results about which solutions are most effective at adding rigidity to fabric Record findings
Suggest and explore ways in which a box can be covered using fabric
Use a template to cut fabric to the appropriate size and shape
Fold and manipulate fabric to cover both the inside and outside of a box
Make a record of steps completed and evaluate outcomes
Select a stiffening agent and use templates to create fabric props that will hold their shape
Use a box as a mould in order to create a box shape from fabric
Use a template to form a box that requires no cutting
Make a record of the processes involved and evaluate outcomes

</td>
<td>
<table>
<tr><th colspan="4">Working as a Designer</th></tr>
<tr><th>Design</th><th>Make</th><th>Evaluate</th><th>Apply</th></tr>
<tr><td>The art or process of deciding how something will look or work.</td><td>Create something by combining materials or putting parts together.</td><td>Form an opinion of the value or quality of something after careful thought.</td><td>Use something or make something work in a particular situation.</td></tr>
</table>
At the end of this block, pupils will …
<table>
<tr><td>Know:
Fabric can be stiffened

Stiffened fabric can hold a form</td><td>Be able to:
Select and apply solutions to stiffen fabric

Make a box using stiffened fabric</td></tr>
</table>
</td>
<td>starch
Starch is a white substance from potatoes and some grains, used to make cloth stiff.

PVA glue
PVA glue is a synthetic polymer used as an adhesive for porous materials. PVA glue is used to secure or ‘paste’ things like clothing, paper and wood.

gelatin
Gelatin is a virtually colourless and tasteless water-soluble protein prepared from collagen and used in food preparation, photographic processes and glue.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:

use a template to cut shapes accurately from fabric
fold and attach fabric to a paper template accurately
mould and manipulate paper to create 3D forms
use a range of methods to join materials

</td>
<td>Technical Language

stiffen - to make something, such as cloth, hard and unable to bend

interfacing - an additional layer applied to the inside of garments or other sewing projects, in certain areas only, to add firmness, shape and structure

cloth - woven or felted fabric made from wool, cotton or a similar fibre</td>
</tr>
</table>

Year 3

Core Discipline:	Food and Nutrition
Key Concept:	A balanced and varied diet

Term and Focus	Taught Content:	Disciplinary Knowledge:		End Point Core Knowledge
Year 3 Autumn Term **Block B** **What do we mean by a balanced diet?** In this block, pupils will consider what a balanced diet is. They will make three products that are often bought pre-made or highly processed.	• Explain that to have a balanced diet we should eat healthy foods regularly and less healthy foods in moderation • Explore how seasonality affects our diet • Show examples of different methods of preserving fruit • Demonstrate how to stew fruit • Evaluate results and suggest ways in which the recipe could be adapted • Explore the difference in ingredients between processed and homemade popcorn • Teach pupils about the origin of popcorn and the plant it comes from • Explain and demonstrate how to make popcorn • Investigate flavour and seasoning combinations Evaluate results • Explore the nutritional value of potatoes and the importance of starch • Explain that deep-fried food can be included in our diets if eaten in moderation • Explain that the fat premade chips are often cooked in can be less healthy than the fat used in homemade versions • Experiment with a range of seasonings to enhance flavour • Explain what semolina is, where it is often used and why it makes a suitable coating for chips • Evaluate outcomes and make comparisons with pre-made chips	**At the end of this block, pupils will …**		**seasonal** Spring, summer, autumn and winter are the four seasons of the year. Seasons are created by the changing amount of sunlight as the Earth orbits the Sun. Weather conditions in a country are known as the climate. The climate determines which foods can grow and when. Seasonal foods are fruit and vegetables that are ripe and ready in a particular season. They will no longer grow when the weather changes. Most foods that come from animals are not seasonal and can be eaten all year round. **balance** Balance means when different things exist in equal, correct or good amounts. The human body needs a balanced diet to work properly. Good health involves drinking enough water and eating the right quantity of foods from the different food groups. **preserve** To preserve means to prevent something, especially food, from decaying (being destroyed by natural processes) by treating it in a particular way. Pickling, salting, smoking, canning, bottling and dehydrating are examples of preservation methods.
		Know: What is meant by the term balanced Why fresh foods are better	**Be able to:** Make a fruit and yoghurt dessert Make homemade chips Flavour foods to increase their sensory qualities	

Curriculum Narrative **Previous Learning**	**Pupils will already be able to:** This block is set in the context of the Science unit - Animals, including humans. • use knife skills with increasing confidence and accuracy • identify examples of processed food • identify some key nutrients found in fresh food • know the importance of fibre and carbohydrates in a balanced diet	**Technical Language** **stew** - to cook slowly in liquid **pressure** - the force or weight with which something presses against something else **seasoning** - salt, herbs or spices added to food to enhance its flavour

Year 3

Core Discipline:	Mechanisms
Key Concept:	Leavers and Linkages

Term and Focus

Year 3 Spring Term

Block C
How can you do a lot of work with little effort?

In this block, pupils will investigate various linkages and levers to design and make their own linkages and levers product. Pupils will select and use a variety of modelling materials to create their final outcomes

Taught Content:

- Learn how levers provide a mechanical advantage by creating a force that can move a load with minimal effort
- Identify the components of a lever: fulcrum, effort and load
- Identify the load, fulcrum and effort in three classes of lever
- Construct a class one and class three lever (see-saw and catapult)
- Evaluate outcomes and explore adaptations to increase the mechanical advantage
- Linkages are a series of levers and pivots
- Explore the difference between the input and output force in a range of linkage systems
- Describe the different types of motion created by linkages
- Design a simple toy mechanism that uses a linkage system
- Explain how your toy will work and the movement created by the linkage
- Select an appropriate design for a specific movement created by a linkage system
- Construct a simple linkage system
- Evaluate the outcome and suggest ways in which the movement of the mechanism could be changed or improved

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Types of levers and linkages
Key terminology relating to levers and linkages
How levers and linkages can change the direction of movement

Be able to:
Design and make simplistic lever and linkage products
Evaluate the success of their outcomes and recommend improvements

End Point Core Knowledge

lever
The lever is one of the most basic forms of a machine. A lever is a rigid body that has a fulcrum along its length. The fulcrum is the point where the lever pivots.

linkage
A mechanical linkage is a series of connected levers and pivots.

mechanism
A mechanism is a system of parts working together in a machine.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

This block is set in the context of the Science unit 'Forces and magnets'

- identify simple mechanisms and their uses

Technical Language

force - pushes or pulls, measured in Newtons

load - the weight of an object or objects being moved

effort - the force applied to make something move

Year 3

Core Discipline: Electrical Systems

Key Concept: Switches and Circuits

Term and Focus

Year 3 Spring Term

Block D
How are things powered?
In this block, pupils will look at different types of energy and how these can be used to power different devices. They will consider how design choices are influenced by energy sources

Taught Content:

- Explain what energy is
- Identify energy sources for a range of objects
- Identify and explain energy sources: food, wind, water, solar, oil, gas, coal, nuclear, petrol
- Match objects to energy sources
- Explain how energy can be controlled
- Identify types of energy and match to everyday examples
- Explain that energy is converted from one form to another and cannot be created or destroyed
- Discuss the factors that designers take into account when selecting energy sources
- Identify advantages and disadvantages of different energy sources
- Explain sustainability and give examples of sustainable energy sources
- Explain fossil fuels and why we are moving away from this source of energy
- Explain the achievements of key inventors, exploring their designs and energy sources used
- Identify functions and power sources of appliances and explain the choices a designer has made
- Identify benefits and limitations of different energy sources
- Conduct practical experiments to demonstrate the conversion of one form of energy to another
- Record findings

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Different types of energy
Why designers need to carefully consider energy sources

Be able to:
Identify how things are powered

Suggest appropriate energy sources for design problems

End Point Core Knowledge

Energy
Energy is another word for power. Energy makes things move. It makes machines work. Energy also makes living things grow. The Law of Conservation of Energy: this law states that energy is never created or destroyed – it is only changed from one state to another. One example is the chemical energy in food that we turn into kinetic energy when we move.

energy source
An energy source is the origin of power or energy. Humans use energy from many different sources. They harness the power of wind, water and sunlight. Plants and animals provide energy in the form of food. People also burn oil, coal and natural gas for energy. They get nuclear energy from uranium atoms.

types of energy
There are two main types of energy: potential energy and kinetic energy. Within these categories, energy can take several different forms:
Potential energy is energy that is stored. One example of this is a spring that is pressed all the way down.
o Chemical energy is released as a result of a chemical reaction. This could be the food we eat to fuel our bodies or the petrol we burn to fuel our cars.

- Stored mechanical energy is the energy stored in a mechanical system such as a wound-up spring.
- Gravitational potential energy is the energy from a suspended

				object or pressure due to gravity, e.g. water behind a dam. • o Nuclear energy is energy released from a nuclear reaction. **Kinetic energy** is the energy an object has due to its motion. • Electrical energy is energy moving around an electrical circuit. • Radiant energy includes light energy, e.g. solar energy. The Earth gets a lot of its energy from the light of the Sun. • Thermal energy (heat energy) can be a solid, liquid or gas that emits heat. • Motion energy is kinetic energy and relates to anything that moves such as a spinning wheel or the wind. • o Sound energy is the energy of sound waves.
Curriculum Narrative **Previous Learning**	**Pupils will already be able to:** • identify mechanisms that are powered by hand • identify some appliances that use electricity • use relevant vocabulary to describe weather • explain what humans and animals need to survive			**Technical Language** **Turbine** - a machine that produces continuous turning power from a fast-moving flow of a liquid or gas **source** (noun) - a place, person or thing which something originates from **source** (verb) - to obtain something from a place, person or thing **intermittent** - stopping and starting often over a period of time renewable (noun) - a natural resource or source of energy that is not depleted by use, such as water, wind or solar power **renewable**- (adjective) not depleted when used

<table>
<tr><th colspan="4">Year 3</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Adapting a recipe</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 3 Summer Term

Block E
How does food affect your body and mind?
In this unit, pupils will explore the nutritional value of food and its effect on our physical and mental health. Pupils will practise methods for preparing a range of vegetables and apply these skills to create different dishes. They will learn how to change the texture and flavour of food by roasting and adding herbs and spices.</td>
<td>• Explore how food benefits the body and mind
• Explore how to adapt the flavour of food
• Evaluate outcomes
• Recognise the importance of fibre and how it aids digestion Identify foods that are high in fibre such as wholegrains
• Identify flavours and suggest ways in which flavours can be adjusted
• Identify a range of spices and use them to season food
• Describe how the texture and taste of food can be changed or enhanced by using seasoning, by roasting and by marinading
• Evaluate outcomes, state preferences and make suggestions about how flavours could be changed or improved</td>
<td colspan="2">At the end of this block, pupils will …
Know:
How food can help their body and mind

How to prepare and cook a range of vegetables

Be able to:
Peel and grate a range of vegetables

Add flavour and texture to foods</td>
<td rowspan="2">nutrition
Nutrition is the process by which living things receive the food necessary for them to grow and be healthy.

fibre
Fibre is a part of food that cannot be broken down by the body and aids digestion by helping other foods move through the body more quickly.

minerals
Minerals are substances that are naturally present in the earth and are not formed from animal or vegetable matter, for example gold and salt. Some minerals are also present in food and drink and in the human body and are essential for good health.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:

This block is set in the context of the Science unit ‘Animals, including humans’.

• use the bridge method to cut food safely
• identify and describe key flavours peel, chop and grate a selection of vegetables
• describe how food can affect the senses</td>
<td>Technical Language

seasoning - salt, herbs or spices added to food to enhance its flavour
claw - a way of holding food to protect the fingers whilst cutting, chopping or slicing
bridge - a technique used when chopping food where the thumb and index finger are placed either side of the food item, forming a kind of bridge shape</td>
</tr>
</table>

Year 3

Core Discipline:	Structures
Key Concept:	Developing strength in structures

Term and Focus

Year 3 Summer Term

Block F
What makes a bridge strong?

In this block, pupils will investigate how the shape and features of a bridge can affect how strong it is. They will also identify types of bridges and the structural changes that engineers and architects make to increase the stability of structures.

Taught Content:

- Label an image with the key features of a bridge
- Identify types of bridges
- Identify differences and similarities between images of a range of bridges
- Explain the purpose of a bridge and the importance of strength and stability
- Explore how using weight as a counterbalance can provide stability to a bridge structure
- Explore ways of stabilising a beam bridge made from paper
- Create features such as arches and piers from paper
- Modify a design in light of test results
- Make decisions about which features are most effective at strengthening a bridge
- Evaluate outcomes
- Design and construct a bridge to hold a specified weight and span a specific gap
- Make decisions about which features to include and explain reasoning
- Construct features from cardboard and attach bridge parts securely to ensure stability
- Adjust a design to improve the stability and strength of a bridge structure
- Evaluate outcomes and make suggestions for improvements

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Bridges are structures that allow people and vehicles to cross over an open space
Towers, piers and arches provide strength to a bridge

Be able to:
Design and build a beam bridge that can hold the weight of 100 pennies

Identify and name parts of a bridge

End Point Core Knowledge

gap
A gap is an empty space or opening in the middle of something or between two things.

deck
A bridge deck is the roadway, or the pedestrian walkway, surface of a bridge.

pier
A bridge pier is a type of structure that extends to the ground below or into the water. It is used to support the bridge and transfer the loads to the foundation

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- build structures using a range of different materials
- make a structure in accordance with a set of criteria
- recognise that a cylindrical pillar is stronger than a rectangular one

Technical Language

suspension - a type of bridge in which the deck is hung below suspension cables on vertical suspenders

arch - a curved structure that supports the weight of something above it, such as a bridge or the upper part of a building

bascule - (pronounced bas-kyool) a movable bridge deck where the rising floor or section is counterbalanced by a weight

<table>
<tr><th colspan="4">Year 4</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Food Choices</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 4 Autumn Term

Block A
What's really in your food?
In this unit, pupils will explore the difference between freshly made food and mass-produced food. The unit will focus on common foods that are part of a healthy diet but are often bought premade and can contribute to poor physical and mental health.</td>
<td>• Compare the ingredients used in mass-produced pizzas with those used in homemade pizzas
• Identify the nutrients present in flour, cheese and tomatoes: carbohydrates, vitamins, protein and calcium
• Make a simple yeast free dough and use the techniques of kneading, rolling and stretching to form the dough
• Explain what gluten is and how it affects the texture of dough
• Explore traditional pizza topping ingredients
• Evaluate outcomes
• Explore the differences in terms of flavour, textures and nutritional value between mass-produced bread and homemade bread
• Explain the additional ingredients that are present in mass-produced bread products
• Explain what yeast is and how the fermentation process works to make bread dough rise
• Define the term proving and explain this process and how it affects the final outcome
• Explore the difference in ingredients between tinned and freshly made soup
• Explain that eating lots of pre-made foods can make it difficult to control our intake of sugar and salt
• Make a simple soup Compare the taste and texture of tinned and freshly made soup
• Evaluate results and suggest ways in which a recipe could be adapted</td>
<td>At the end of this block, pupils will …
Know:
Processed foods have many added ingredients

Be able to:
Make, roll and shape bread dough Make a soup</td>
<td>ingredients
Ingredients are any foods or substances combined to make a particular dish. Many processed and ready-made meals contain additional ingredients to enhance flavour or extend shelf life.

processed
Processed food is food that has been treated in order to change or preserve it.

bread
Bread is a food made from flour, water and usually yeast, mixed and baked.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:

• identify some of the nutrients in a range of foods
• dice, slice, chop and grate vegetables
• explain the benefits of fresh food, compared to processed food</td>
<td>Technical Language

gluten - a protein that is contained in wheat and some other grains

knead - (verb) to press something, especially a mixture for making bread, firmly and repeatedly with the hands and fingers

ferment - (verb) to experience a chemical change because of the action of yeast or bacteria</td>
</tr>
</table>

Year 4

Core Discipline:	Mechanisms
Key Concept:	Hinges

Term and Focus

Year 4 Autumn Term

Block B
How many ways are there to open a door?
In this block, pupils will investigate how hinges work. They will then select a range of modelling materials and tools to make their own hinged products, evaluating and modifying them throughout

Taught Content:

- Identify the purpose of a hinge and know that it is a rotating joint that allows movement between two linked objects
- Explain the different features and applications of a variety of hinges
- Use a range of materials and simple tools to construct a variety of hinges and evaluate their effectiveness
- Use measuring, cutting and joining skills to construct a gift box from cardboard
- Design and make a product that incorporates a working hinge
- Make decisions about the most appropriate hinge to be incorporated and give reasons for choice
- Evaluate outcomes, making judgements about aesthetics, accuracy and stability and effectiveness of the hinge
- Apply knowledge of how to make a hinge to fulfil a specific brief
- Use modelling skills to construct a stable product
- Modify the design as necessary
- Evaluate outcomes

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Types of hinges and the related terminology

Common uses for hinges

Be able to:
Make a variety of model hinges

Make and evaluate hinged products using modelling materials

End Point Core Knowledge

hinge
A hinge is a rotating joint that allows movement between two linked objects.
knuckle
The knuckle is the hollow circular part at the joint of a hinge through which a pin is passed. The knuckle is often called a loop, joint, node or curl.
leaf
The leaf is the portion of a hinge extending from the knuckle and which usually revolves around a pin.
pin
The pin is the rod running the length of the hinge. The pin holds the leaves of the hinge together.
barrel
The barrel is the part of a butt hinge where the knuckles are connected with a pin.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- use cutting and joining techniques with a range of materials including card, plastic and wood
- show an understanding of how to strengthen and stiffen structures
- identify and make simple mechanisms

Technical Language

butt hinge - a hinge that consist of two rectangular leaves connected with a pin, with screw holes to attach the hinge to a surface
concealed hinge - a hinge that is completely hidden when the door or lid of a box is closed
net - a two-dimensional shape that can be folded to form a three-dimensional solid

Year 4

Core Discipline:	Electrical Systems
Key Concept:	Switches and Circuits revisited

Term and Focus	Taught Content:	Disciplinary Knowledge:	End Point Core Knowledge
Year 4 Spring Term **Block C** **How useful are switches?** In this block, pupils will learn how different types of switches work within electrical circuits and how these can be used to perform a function in a product.	• Teach pupils that a switch is a control mechanism used to interrupt the flow of electricity in a circuit • Explain that switches are useful because they allow us to turn appliances on and off • Give examples of switches that have more than one function • Teach pupils that some switches can vary the speed, volume or degree of light provided by appliances • Build simple circuits to include a switch • Explore appliances that have different kinds of switches and how they work • Draw a simple circuit diagram for an electrical appliance • Explain the different purposes of switches: efficiency, safety and functionality • Explore appliances that have more than one switch and investigate their purposes, such as to vary volume, light and heat	**Working as a Designer** **Design**: The art or process of deciding how something will look or work. **Make**: Create something by combining materials or putting parts together. **Evaluate**: Form an opinion of the value or quality of something after careful thought. **Apply**: Use something or make something work in a particular situation. **At the end of this block, pupils will …** **Know:** A switch is an interruption in a circuit Switches are widely used in a range of products **Be able to:** Incorporate different types of switches into circuits to perform a function	**switch** A switch is a device for making or breaking the connection in an electrical circuit. **circuit** An electrical circuit is a complete path of wires and equipment along which an electric current flows. **component** A component is one of the parts of an electrical circuit such as a bulb, battery or switch. **current** A current is the movement of water, air or electricity in a particular direction.

Curriculum Narrative	Technical Language
Pupils will already be able to: This block is set in the context of the Science unit 'Electricity' • name sources of electrical energy: batteries, mains power, rechargeable batteries • identify common appliances that use electricity • name the basic components of an electrical circuit: bulb, battery, motor, buzzer	**interruption** - an occasion when someone or something stops something from happening for a short period **unbroken** - continuous with no pauses **conductor** - a material that allows electricity to pass through it **multi-purpose** - having many different uses

Year 4

Core Discipline:	Structures
Key Concept:	Designing Structures

Term and Focus	Taught Content:	Disciplinary Knowledge:	End Point Core Knowledge
Year 4 Spring Term **Block D** **What shapes will give a structure stability?** In this block, pupils will explore which shapes can be used to provide stability in structures. They will use a range of materials to investigate 3D shapes and in Lesson 3 they will collaborate on a class geodesic Roma Agrawal (born 1983) dome structure.	• Identify and explain the forces that affect buildings (compression, gravity, tension) • Describe the role of engineers and architects • Conduct investigations to discover the loadbearing properties of cylinders made from a sheet of paper compared with cylindrical forms constructed from a series of smaller cylinders • Record results and draw conclusions from findings • Investigate the strength and stability of a range of geometric shapes • Make a record of tests conducted and summarise outcomes • Identify which shapes are strongest and most stable and their application in construction • Apply knowledge and skills to a practical context • Collaborate with others to create a structure from triangles • Create, adapt and modify a design • Evaluate results and suggest improvements	**Working as a Designer** **Design**: The art or process of deciding how something will look or work. **Make**: Create something by combining materials or putting parts together. **Evaluate**: Form an opinion of the value or quality of something after careful thought. **Apply**: Use something or make something work in a particular situation. **At the end of this block, pupils will …** **Know:** Triangles provide stability in a structure Structural engineers work with architects to ensure structures withstand forces **Be able to:** Make triangles to form and join trusses Identify the forces that affect structures	**structural engineer** A structural engineer analyses and designs the gravity support and force resistance of buildings, bridges and other structures. **geodesic** Geodesic refers to curved surfaces made up of geometric shapes and straight lines. **gravity** Gravity is the force that attracts objects towards one another, especially the force that makes things fall to the ground.

Curriculum Narrative Previous Learning	**Pupils will already be able to:** ▪ increase the rigidity and strength of paper by folding and creasing ▪ name the properties of 2D and 3D shapes ▪ explain the difference between 2D and 3D shapes	Technical Language
		truss - a rigid framework constructed from triangles **compression** - the act of putting pressure on an object from different sides until it gets smaller **tension** - the state of being stretched tight and stiff

Year 4

Core Discipline:	Textiles
Key Concept:	Fixing and Fastenings

Term and Focus

Year 4 Summer Term

Block E
How do you keep a tea towel from slipping off a hook?
In this block, pupils will learn how to sew a button onto fabric. They will identify the different functions of fastenings and reflect on the advantages or disadvantages of using certain fasteners. They will also create a solution to the problem of a towel slipping off a hook.

Taught Content:

- Explore the component parts and purposes of a range of fasteners
- Identify advantages and disadvantages of each fastener
- Explain the suitability of fasteners for specific purposes
- Record findings
- Use sewing techniques to attach a range of fasteners
- Evaluate outcomes and record the methods used
- Using running stitch, create a pocket by stitching two pieces of felt together
- Use running stitch to gather fabric to a specific length
- Apply previously learned skills and knowledge to a context
- Select and make a suitable fastener
- Explain a process and evaluate outcomes

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Fastenings have different functions

A shank provides a small amount of space between the button and fabric

Be able to:
Select appropriate fastenings and attach them to fabric

Make a shank for a button

End Point Core Knowledge

shank
A shank is a short stem on the underside of a button that allows there to be a gap between the button and the cloth it is attached to.
burr
A burr is a seed container covered in tiny hooks, which attaches to animal fur and clothing, facilitating effective dispersal.
hook and loop
Hook and loop is a fastening system using two sides of material: one covered in hooks and the other covered in loops.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- use running stitch to attach fabrics
- describe the properties of materials
- use scissors to cut accurately

Technical Language

buckle (noun) - a piece of metal at one end of a belt or strap, used to fasten the two ends together
fastener - a button, zip or other device for temporarily joining together the parts of things such as clothes
raw edges - an unfinished, rough or undecorated edge

<table>
<tr><th colspan="4">Year 4</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Understanding Dietary requirements</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 4 Summer Term

Block F
Is cheap food always worse for you?
In this block, pupils will learn how to make healthy food from low-cost ingredients. They will start to consider how cheap processed foods will affect their diet and health in later life .</td>
<td>• Compare the advantages of processed food with its disadvantages
• Explore ways of using low-cost fresh ingredients to make simple and appetising meals
• Evaluate outcomes
• Discover the origins of the pasty and how this traditional snack has been adapted in many other countries
• Compare the cost and nutritional content of pre-prepared and homemade food
• Make shortcrust pastry
• Define the term fusion
• Suggest ways in which a recipe could be adapted to reflect the cuisine of other countries
• Explore reasons why meat consumption is high in this country and the advantages of reducing this consumption
• Identify ingredients that provide protein which can serve as a suitable alternative to meat
• Evaluate outcomes and suggest ways in which a curry could be adapted</td>
<td>At the end of this block, pupils will …
Know:
That cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food

Be able to:
Peel, grate and chop vegetables to make economical, tasty and healthy food</td>
<td>cheap
Cheap means to cost little money or to cost less than expected.
fusion
Fusion cooking is cooking that is a mixture of different styles.
texture
Texture is the way a surface, substance or piece of cloth feels when you touch it – for example, how rough, smooth, hard or soft it is.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:

This block is set in the context of the CUSP Science unit ‘Animals, including humans’.

• recognise that good nutrition keeps the body healthy, provides energy and helps the body to repair
• use the claw and bridge methods to cut food safely
• explain why ultra-processed food is unhealthy</td>
<td>Technical Language

shallow-fry - to cook in a small amount of oil or fat
shortening - butter, lard or fat used to make pastry or shortbread, resulting in a crumbly texture
fragrant - to have a pleasant or sweet smell</td>
</tr>
</table>

<table>
<tr><th colspan="4">Year 5</th></tr>
<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Eating Seasonally</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th colspan="2">Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 5 Autumn Term

Block A
Why are our diets so different?
In this block, pupils will look to Middle Eastern and Danish foods for inspiration and consider what they can learn from the diets of different cultures. They will learn how to make flatbreads and use a range of techniques to make delicious, appetising food.</td>
<td>• Explore the varieties of bread from around the world
• Explain how flatbreads differ, in terms of the ingredients and cooking methods used, from traditional breads
• Use a griddle pan
• Make garlic butter
• Explain the differences and similarities between the Danish and UK diet
• Explore and explain the nutritional value, taste and texture of rye bread
• Investigate ways of combining a range of ingredients to create an open sandwich that is visually appealing
• Explain and demonstrate techniques for improving the visual appeal of food:
• • varying colours and textures • adding height • adding components in odd numbers • using a squirty bottle to add dressings and sauces with precision
• Explore some culinary traditions of Middle Eastern and Mediterranean countries
• Define the term mezze
• Make simple yoghurt based dressings using a range of flavours
• Explain the nutritional value of ingredients such as yoghurt and chickpeas</td>
<td colspan="2">At the end of this block, pupils will …
Know:
Some foods and key ingredients from other cultures
How other cultures’ food can be nutritious

Be able to:
Make, roll and cook a flatbread
Prepare a range of vegetables
Present foods to a high standard</td>
<td>culture
Culture refers to the customs and beliefs, art, way of life and social organisation of a particular country or group.
presentation
Food presentation is the art of modifying, arranging or decorating food to enhance its aesthetic appeal.
variety
Variety refers to several different sorts of the same thing.
smørrebrød
Smørrebrød is a traditional Danish open-faced sandwich.
flatbread
Flatbread is a type of bread that is thin and flat and made without yeast.
Mezze
Mezze is a style of dining common in the Mediterranean and Middle East. It resembles a collection of Spanish tapas and other small plates meant to stimulate your appetite. But unlike those appetizers, mezze often makes up an entire meal, combining both cold and hot, vegetarian and meat items</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="3">Pupils will already be able to:

• use knife skills safely to prepare a range of vegetables
• knead, roll and shape dough
• use the claw and bridge techniques confidently</td>
<td>Technical Language
fibre - the part of food that keeps the bowels working and moving other food quickly through the body
knead - to press something, especially a mixture for making bread, firmly and repeatedly with the hands and fingers
unleavened - made without any yeast, or other substance that would cause the bread to rise, and therefore flat</td>
</tr>
</table>

Year 5

Core Discipline:	Electrical Systems
Key Concept:	Complex switches and circuits

Term and Focus

Year 5 Autumn Term

Block B
In this block, pupils will draw on the knowledge they have learnt so far to design and make a road safety belt. Pupils will write a simple program for a micro:bit and evaluate their outcome against the design brief.

Taught Content:

- Understand the importance of road safety
- Select materials based on their properties
- Combine materials to fulfil a design brief
- Different fastenings are appropriate for different purposes
- Measure and cut a paper template
- Apply basic stitching skills
- Explain how a product meets a design brief
- Technology can be used to control, program and monitor products
- Develop an algorithm
- Write and test a simple program using coding knowledge
- Evaluate a product against a design brief

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:	**Be able to:**
Technology can be used to program and control a product	Combine elements of their design knowledge to fulfil a brief

End Point Core Knowledge

properties
Properties are the qualities or characteristics that a material has, such as flexibility, elasticity, etc.
fastener
A fastener is a button, zip or other device used for temporarily joining together the parts of items such as clothes.
algorithm
An algorithm is a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- describe the properties of materials
- identify and attach fastenings understand and use simple algorithms
- design and debug simple programs

Technical Language

fluorescent - appearing very bright when light shines on it; that can be seen in the dark
reflective - capable of throwing back light, heat or sound from a surface
attachment point - the point at which one thing joins to another
debug - to look for and remove faults in a computer program
programming - writing and testing computer programs

Year 5

Core Discipline:	Textiles
Key Concept:	Making clothes last longer

Term and Focus

Year 5 Spring Term

Block C
Which fabric is ideal for creating a functional and hardwearing lunch bag?
In this block, pupils will consider the durability of fabrics. They will design and make a functional and hardwearing lunch bag. They will create fair tests to investigate the properties of a range of fabrics and consider insulation and waterproofing.

Taught Content:

- Explore the different properties of a range of fabrics and how these determine their uses
- Plan and carry out a fair test
- Sort fabrics according to their properties and record findings
- Explore the properties of materials used in the storage of food
- Explain why materials need to be durable and waterproof
- Explore the effect of coating fabric with wax
- Explore which clothing items can be repurposed as a lunch bag
- Use cutting, stitching and folding to construct a rectangular-based durable lunch bag
- Make choices about fastening and decorations
- Evaluate outcomes

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
How to waterproof cotton fabric

Which fabrics are both functional and hardwearing

Be able to:
Use beeswax to waterproof cotton fabric

Repurpose a pair of jeans

End Point Core Knowledge

durability
Durability is the quality of being able to last for a long time without breaking or becoming weaker.
repurpose
To repurpose means to change something slightly in order to make it suitable for a different use.
functional
Something that is functional is practical and useful .

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- use a range of stitches to join fabric
- make simple fastenings
- explain the concept of wax resist
- identify properties of everyday materials

Technical Language

beeswax - a yellow sticky substance that is produced by bees and is used especially for making candles and polish for wood
swatch - a small piece of cloth used to show people what a larger piece would look or feel like
insulate - to protect something with a material that prevents heat, sound, electricity etc. from passing through

Year 5

Core Discipline:	Mechanisms
Key Concept:	Pulleys

Term and Focus

Year 5 Spring Term

Block D

How can you lift a car onto a roof?

In this block, pupils will investigate how pulleys and gears work. They will design and make their own pulleys and gears products, selecting and using a variety of modelling materials to create final outcomes.

Taught Content:

- Explain what a gear is and how it works
- Identify different types of gears and their applications
- Explore how the direction and speed of movement is changed by using a system of gears and / or pulleys
- Introduce and define technical vocabulary related to gears and pulleys
- Construct a simple pulley system to lift a load
- Use diagrams, photos and annotations to record information about gears and pulleys
- Explore different designs of cranes and their everyday applications
- Cranes use pulley systems to provide a mechanical advantage
- Identify specific constraints and limitations related to a design brief
- Make a structure containing a pulley system for a specific purpose
- Evaluate outcomes, identifying where modifications need to be made and assess whether the requirements and specifications of the brief have been met
- Explore a range of designs and structures that could fulfil the requirements of the original design brief
- Explore a range of gear and pulley mechanisms used in structures such as Ferris wheels, windmills, ski lifts and wells and use these as a basis for designs
- Apply modelling, measuring, joining and cutting skills

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:

Types of gears and terminology relating to gears

Common uses of pulleys and gears

How pulleys and gears can change the direction of movement

Be able to:

Design and make products that use pulleys and gears to lift loads

Evaluate the success of their outcomes and recommend improvements

End Point Core Knowledge

gear

A gear is a toothed wheel that works with others to transfer rotational movement.

pulley

A pulley is a wheel with a grooved rim around it which holds a cord, belt or rope. Pulleys are used to change the speed, direction or magnitude of a force and can be used to raise heavy loads.

mechanism

A mechanism is a system of parts working together in a machine.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

This block is set in the context of the Science unit 'Forces'.

- give examples of simple mechanisms such as levers and linkages
- cut and join a range of materials
- identify ways in which to make a structure more stable and rigid

Technical Language

gear train - a system of gears which transmits movement from one shaft to another

driver gear - a gear wheel that causes other wheels to rotate

idler - a gear for support or guidance instead of power transmission

Year 5

Core Discipline:	Structures
Key Concept:	Developing stability in structures

Term and Focus

Year 5 Summer Term

Block E

How are frames strengthened, reinforced and made rigid?

In this unit, pupils will look at a range of ways that frames are reinforced to make them stable. They will identify joins and supports and create a model shelter based on what they have learnt.

Taught Content:

- Explore ways in which framed structures are reinforced
- Understand and use technical vocabulary relating to the reinforcement of structures
- Experiment with methods of joining straws securely and evaluate outcomes
- Use carpentry equipment appropriately and safely
- Saw lengths of wood to create a frame
- Recognise that triangles are the most suitable shape to create gussets and braces to reinforce joins in a frame
- Make a written record of the work completed using appropriate vocabulary
- Apply knowledge of how to make a structure to fulfil a specific brief
- Use carpentry skills to construct a stable frame, incorporating structural joins for additional support and strength
- Identify the structural joins used and give reasons for choices Evaluate and modify the design and structure as needed

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:

Engineers use a range of methods to strengthen and reinforce structures

Be able to:

Identify and describe ways that frames are strengthened and reinforced

End Point Core Knowledge

frame
A frame is the supporting structure of a piece of furniture, a building, a vehicle etc. that gives it its shape.

I-beam
An I-beam is a girder which has the shape of an I when viewed in section.

struts
Struts are rods or bars forming part of a framework and designed to resist compression.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- identify shapes suitable for adding strength to a structure
- identify some methods used to provide structural stability

Technical Language

brace - a device fitted to something to give support
mitre - a joint made between two pieces of wood or other material at an angle of 90°, such that the line of junction bisects this angle
gussets - brackets used to strengthen the joins of a structure

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<tr><td colspan="2">Core Discipline:</td><td colspan="2">Food and Nutrition</td></tr>
<tr><td colspan="2">Key Concept:</td><td colspan="2">Celebrating culture</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 5 Summer Term

Block F
What can you learn from different cultures' diets?

In this block, pupils will look to different countries to see what can be learnt from different cultures. The recipes chosen showcase how certain foods can contribute to good health and wellbeing. Pupils will also learn how modern British food represents an eclectic mix of cultures</td>
<td>• Explain how changes in lifestyles over time require a change in diet
• Explore the nutritional value of traditional Asian recipes, ingredients and cooking methods
• Make a traditional Vietnamese summer roll
• Use traditional Asian ingredients such as mint, coriander, fish sauce and rice wine vinegar to add flavours
• Evaluate outcomes and suggest ways that a recipe could be adapted
• Identify and use some core ingredients and flavours found in Asian cuisine
• Explore how specific vegetables enhance our health and have medicinal qualities, such as garlic and ginger
• Use the stir-fry cooking technique and evaluate outcomes
• Identify and use some core ingredients and flavours typical of Indian cuisine
• Explain how UK diets have been influenced by Indian cuisine
• Explore the medicinal qualities of spices such as turmeric
• Experiment with spice mixes to add flavour to vegetables
• Explain the term parboil
• Select vegetables for their flavour and nutritional value
• Evaluate outcomes and explain how a recipe can be adapted</td>
<td>At the end of this block, pupils will …
Know:
How foods can be used as medicines
How eating food from different countries can help us be healthy

Be able to:
Slice and ribbon a range of vegetables
Stir-fry vegetables</td>
<td>culture
Culture refers to the customs and beliefs, art, way of life and social organisation of a particular country or group.

migration
Migration is the movement every year of large numbers of birds or animals from one place to another. It can also mean the movement of people to a new country or area in order to find work or better living conditions.

spices
Spices are one of the various types of powder or seeds that come from plants and are used in cooking. Spices have a strong taste and smell.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:
This block is set in the context of the Geography unit 'World countries'.
• use a range of techniques to prepare and cook vegetables with accuracy and confidence
• recognise that good nutrition keeps the body healthy, provides energy and helps the body to repair
• identify some advantages and disadvantages of eating pre-prepared food
• use appropriate vocabulary to explain processes and describe aromas, flavours and textures</td>
<td>Technical Language
Medicinal - helpful in the process of curing illness or infection
fragrant - having a pleasant smell
stir-fry (noun) - a hot dish made by frying small pieces of meat, fish and / or vegetables
stir-fry (verb) - to fry (meat, fish or vegetables) rapidly over a high heat while stirring briskly</td>
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• Evaluate outcomes and suggest ways that a recipe could be adapted
• Identify and use some core ingredients and flavours found in Asian cuisine
• Explore how specific vegetables enhance our health and have medicinal qualities, such as garlic and ginger
• Use the stir-fry cooking technique and evaluate outcomes
• Identify and use some core ingredients and flavours typical of Indian cuisine
• Explain how UK diets have been influenced by Indian cuisine
• Explore the medicinal qualities of spices such as turmeric
• Experiment with spice mixes to add flavour to vegetables
• Explain the term parboil
• Select vegetables for their flavour and nutritional value
• Evaluate outcomes and explain how a recipe can be adapted</td>
<td>At the end of this block, pupils will …
Know:
How foods can be used as medicines
How eating food from different countries can help us be healthy

Be able to:
Slice and ribbon a range of vegetables
Stir-fry vegetables</td>
<td>culture
Culture refers to the customs and beliefs, art, way of life and social organisation of a particular country or group.

migration
Migration is the movement every year of large numbers of birds or animals from one place to another. It can also mean the movement of people to a new country or area in order to find work or better living conditions.

spices
Spices are one of the various types of powder or seeds that come from plants and are used in cooking. Spices have a strong taste and smell.</td>
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Previous Learning</td>
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• recognise that good nutrition keeps the body healthy, provides energy and helps the body to repair
• identify some advantages and disadvantages of eating pre-prepared food
• use appropriate vocabulary to explain processes and describe aromas, flavours and textures</td>
<td>Technical Language
Medicinal - helpful in the process of curing illness or infection
fragrant - having a pleasant smell
stir-fry (noun) - a hot dish made by frying small pieces of meat, fish and / or vegetables
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<table>
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<tr><td colspan="2">Key Concept:</td><td colspan="2">Eating ethically</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 6 Autumn Term

Block A
Can street foods save us?
In this block, pupils will study and make street foods from different cultures. The aim of these sessions is to encourage pupils to think about their own diet and snacks and how their nutritional value could be improved. The block provides an opportunity for pupils to learn about a range of different cultures.</td>
<td>• Explore the cultural food traditions of Mexico
• Explain what a burrito is
• Identify reasons why some common snacks are unhealthy
• Adapt traditional Mexican recipes to create a healthy snack
• Combine flavours and textures and evaluate the results, making suggestions for flavour adjustments
• Identify reasons why some common snacks are unhealthy
• Adapt traditional Mediterranean and Middle Eastern recipes to create a healthy snack
• Make pitta bread dough and cook safely
• Make hummus and identify its nutritional content and evaluate outcomes
• Explore traditional Indian snacks
• Explain how the UK diet has been heavily influenced by migration from the Indian continent
• Make samosas from filo pastry
• Explain how filo pastry is made and why, in some cases, buying premade food is beneficial</td>
<td>At the end of this block, pupils will …
Know:
What street foods are
How snacks can be good foods to eat

Be able to:
Make a burrito Make and roll bread dough
Make a savoury pastry</td>
<td>street food
Street food is prepared or cooked and sold by vendors in a street or other public location for immediate consumption.
culture
Culture refers to the customs and beliefs, art, way of life and social organisation of a particular country or group.
snack
A snack is a small portion of food, generally eaten between meals. Snacks come in a variety of forms including packaged snack foods and other processed foods, as well as items made from fresh ingredients at home.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:
• identify some traditional dishes and ingredients of different cultures
• make, roll and cook flatbread
• prepare a range of vegetables
• present food to a high standard
• explain the nutritional value of a range of foods</td>
<td>Technical Language
nutrient - a substance that provides nourishment essential for the maintenance of life and for growth
prove - to swell (become larger or rounder) before being baked because of the action of yeast
fry - to cook something in hot fat or oil</td>
</tr>
</table>

Year 6

Core Discipline:	Mechanisms
Key Concept:	Gears

Term and Focus

Year 6 Autumn Term

Block B
How do pulleys and gears let you see the world?

In this block, pupils will investigate how pulleys and gears work and design and make their own gears product. Pupils will select and use a variety of modelling materials to create final outcomes.

Taught Content:

- Identify different pulley systems such as fixed, movable and compound and explain how they work and their applications
- Explore and compare the mechanical advantage provided by different pulley systems
- Explain what a block and tackle is and identify its common uses
- Make accurate measurements of force using a Newton meter
- Draw conclusions from results of experimentation
- Name and identify the difference between different types of gears such as spur, worm and bevel
- Identify the movement involved in a rack and pinion system
- Apply knowledge of gear trains to design and construct a model Ferris wheel
- Make decisions about aesthetics, materials to be used and the method of construction
- Evaluate outcomes and make reasoned suggestions for modifications and improvements

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Types of pulley systems and gears
Common uses of pulleys and gears

How pulleys and gears can create simple mechanisms and change direction of movement

Be able to:
Design and make a model Ferris wheel powered by gears

Evaluate the success of their outcomes and recommend improvements

End Point Core Knowledge

pulley
A pulley is a wheel with a grooved rim around it which holds a cord, belt or rope. Pulleys are used to change the speed, direction or magnitude of a force and can be used to raise heavy loads.
movable pulley
This is a simple pulley where the wheel can both move and rotate. In this pulley system, less force is required to lift a load.
fixed pulley
A fixed pulley is one which has a rotating wheel that is attached to a stationary object such as a beam.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- explain what a gear is and how it works
- identify different types of gears and their applications
- explore how direction and speed of movement is changed by using a system of gears and / or pulleys
- construct a simple pulley system to lift a load

Technical Language

block and tackle - a lifting mechanism consisting of ropes, a pulley block and a hook
rack and pinion - a device for converting rotary into linear motion and vice versa, in which a gear wheel (the pinion) engages with a flat-toothed bar (the rack)
driver gear - a gear wheel that causes other wheels in a gear train to rotate
driven gear - a gear wheel that moves in the opposite direction to the gear that is driving it

<table>
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<tr><td colspan="2">Key Concept:</td><td colspan="2">Eating on a budget</td></tr>
<tr><th>Term and Focus</th><th>Taught Content:</th><th>Disciplinary Knowledge:</th><th>End Point Core Knowledge</th></tr>
<tr>
<td>Year 6 Spring Term

Block C
Does food affect the way you feel?

Pupils will learn how to cook foods that are often pre-made and processed. They will learn and apply techniques to make dishes designed to help improve energy levels, mood and future health.</td>
<td>• Explore the importance of carbohydrates and the difference between simple and complex carbohydrates
• Demonstrate the claw method to dice vegetables safely
• Cook pasta and make a simple tomato sauce Use seasoning to adjust flavour
• Explore the remedial qualities of food Make a basic stock
• Use a range of culinary techniques to prepare vegetables: dice, chop, grate, peel
• Taste, discuss and suggest modifications to a final dish
• Explore and use techniques to make food visually appealing
• Apply knife skills learned in the previous lessons
• Select and arrange colours and textures in a visually attractive way
• Evaluate the visual appeal of a dish and suggest improvements</td>
<td>At the end of this block, pupils will …
Know:
The difference between slow release and quick release carbohydrates

How food can improve their mood and energy levels

Be able to:
Dice, slice, peel, grate and cook a range of vegetables

Make a sauce and a stock

Use height and colour to improve the visual appeal of food</td>
<td>carbohydrates
Carbohydrates provide the body with energy and essential nutrients. Simple carbohydrates are broken down quickly by the body to be used as energy and are found naturally in foods such as fruits, milk and milk products. They are also found in processed and refined sugars such as sweets and soft drinks. The majority of carbohydrate intake should come from complex carbohydrates (starches) and naturally occurring sugars rather than processed or refined sugars.
staple
A staple food is any food that is a common part of a region's everyday diet. They tend to be foods that can be stored and eaten throughout the year. Potatoes and rice are the most common examples, however, contrary to popular belief, bread is not a staple food as it cannot be stored for a long period of time.
nutrient
A nutrient is a substance needed by organisms to stay alive and healthy. A healthy human diet includes seven different kinds of nutrient: carbohydrates, proteins, fats and oils, minerals, vitamins, fibre and water.</td>
</tr>
<tr>
<td>Curriculum Narrative

Previous Learning</td>
<td colspan="2">Pupils will already be able to:
• explain what humans need to stay healthy
• identify the main food groups
• hold and use utensils correctly</td>
<td>Technical Language
sauté -to cook over heat, in fat or oil
translucent - allowing some light to pass through
dice - to cut food into small squares</td>
</tr>
</table>

Year 6

Core Discipline:	Structures
Key Concept:	Designing Structures (revisit)

Term and Focus

Year 6 Spring Term

Block D
How strong is a piece of spaghetti?

In this block, pupils will test the strength of spaghetti and then apply what they have learned to construct a tower that is at least one metre tall.

Taught Content:

- Devise and carry out an experiment to test the strength and stability of spaghetti
- Through testing, find ways to increase the weight that spaghetti can withstand
- Draw conclusions from observations and test results
- Investigate the stability and strength of 3D shapes
- Explore the effect of adding features such as flying buttresses to a structure
- Record observations and evaluate outcomes
- Identify the features that make a tower more stable
- Explain how to use guy lines to provide support for a tower
- Combine techniques and features to construct a stable tower from limited materials
- Identify ways in which a structure can be made more stable and modify a design as necessary

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Structures can be supported with guy lines and flying buttresses

The shorter the piece of spaghetti, the stronger it will be

Be able to:
Construct a flying buttress to support a tower

Use appropriate lengths of spaghetti to increase strength and stability

End Point Core Knowledge

guyed mast
A guyed mast or guyed tower is a tall, thin, vertical structure that depends on guy lines for stability.

flying buttress
A flying buttress is an architectural support that bears the load of roofs or vaulted ceilings.

load
Load refers to the amount of weight that is pressing down on something.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- identify 2D shapes that have strength and stability, such as triangles
- explain why cylinders are capable of bearing weight
- create a truss, using a series of triangles

Technical Language

Aesthetic - connected with beauty and art and the understanding of beautiful things
Edifice - a large, impressive building
constraints - restrictions or limitations

Year 6

Core Discipline: Electrical Systems

Key Concept: Complex switches and circuits

Term and Focus

Year 6 Summer Term

Block E

Can switches perform more than one function?

In this block, pupils will learn how switches can be combined with electrical components in different ways to change the functionality of a product.

Taught Content:

- Explore types and functions of switches in a range of products
- Identify switches that have a single function and those that are multi-purpose
- Suggest reasons why specific switches have been used in particular appliances
- Draw circuit diagrams to represent a circuit including a bulb or buzzer and a switch Make accurate recordings
- Build circuits according to specific criteria, using a range of components
- Define the term simultaneous
- Explore and build circuits that will allow components to work independently of each other and simultaneously (series and parallel)
- Identify the circuits required for everyday appliances
- Draw circuit diagrams to represent those circuits (series and parallel)

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
More than one switch can be used to change the functionality of a product

Be able to:
Use switches to adapt a product in response to a design brief

End Point Core Knowledge

switch
A switch is a device for making or breaking the connection in an electrical circuit. parallel **circuit**
In parallel circuits, electrical components are connected alongside one another, forming extra loops. Since there are different loops, the current will split as it leaves the cell and pass through one of the loops. In a parallel circuit, if a lamp breaks or a component is disconnected from one parallel wire, the components on different branches keep working. And, unlike a series circuit, the lamps stay bright if you add more lamps in parallel.
series circuit
In a series circuit, components are connected in one loop. The electrical current passes through all the different components, one after the other, without any branches. If a lamp breaks or a component is disconnected, the circuit is broken and all the components stop working.
component
A component is one of the parts of an electrical circuit such as a bulb, battery or switch.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

This block is set in the context of the Science unit 'Electricity'.

- construct simple electrical circuits and name the components
- recognise that a switch opens and closes a circuit
- give reasons for variations in how components function in a circuit
- use recognised symbols when representing a simple circuit

Technical Language

functionality - the purpose that something is designed for or expected to perform
multi-function - having many different functions
brief - a written description of what a new project or product should do, what is needed to produce it, how long it will take etc.
simultaneous - happening or being done at exactly the same time

Year 6

Core Discipline:	Textiles
Key Concept:	Sustainable materials

Term and Focus

Year 6 Summer Term

Block F
How can we reduce, recycle and repurpose?

In this block, pupils will learn how they can reduce waste by recycling and repurposing snack packets and plastic bags into useful items.

Taught Content:

- Explore ways in which objects and materials can be repurposed
- Crochet using repurposed materials
- Identify properties of materials
- Explain how a material's properties will determine its use
- Explain how plastic is harmful to the environment
- Identify properties of plastic
- Create a skein of plastic yarn from plastic bags
- Crochet a simple bag Make a record of the processes completed
- Explore the effects of waste on the planet Join snack packets by applying heat
- Identify properties of the materials used to make snack packets
- Identify suitable alternative uses for recycled crisp packets
- Design and make a bag using recycled materials and evaluate results

Disciplinary Knowledge:

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

At the end of this block, pupils will …

Know:
Plastic waste can be recycled and repurposed into practical, useful items

Be able to:
Make a crochet hook out of a chopstick Use plastic bags and snack packets to create practical items

End Point Core Knowledge

recycle
To recycle means to collect and treat used objects and materials in order to use them again.

repurpose
To repurpose means to change something slightly in order to make it suitable for a different use.

reduce
To reduce means to become or to make something smaller in terms of size, degree of importance or quantity.

Curriculum Narrative

Previous Learning

Pupils will already be able to:

- make a chain from yarn
- identify properties of materials
- explore the different properties of a range of fabrics and how these determine their uses

Technical Language

chain - a crochet stitch where connected loops of yarn or thread form a chain
seal (verb) - to fasten or close securely
skein - a loosely coiled length of yarn