



St Clare's Curriculum

Design & Technology



Early Years Statutory Framework

Physical Development

Physical activity is vital in children's all-round development, enabling them to pursue happy, healthy and active lives. Gross and fine motor experiences develop incrementally throughout early childhood, starting with sensory explorations and the development of a child's strength, co-ordination and positional awareness through tummy time, crawling and play movement with both objects and adults. By creating games and providing opportunities for play both indoors and outdoors, adults can support children to develop their core strength, stability, balance, spatial awareness, co-ordination and agility. Gross motor skills provide the foundation for developing healthy bodies and social and emotional well-being. Fine motor control and precision helps with hand-eye co-ordination, which is later linked to early literacy. Repeated and varied opportunities to explore and play with small world activities, puzzles, arts and crafts and the practice of using small tools, with feedback and support from adults, allow children to develop proficiency, control and confidence.

Understanding the World

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

ELG: Creating with Materials

Children at the expected level of development will:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;
- Share their creations, explaining the process they have used;
- Make use of props and materials when role playing characters in narratives and stories.

Pupils learn about healthy eating: making healthy choices, when to have treats and what a healthy packed lunch looks like. They learn about oral hygiene and the importance of healthy teeth.

Through visiting a farm, they learn that eggs come from hens and what food comes from what animal. They also learn that fruit grows on trees and bushes and by growing cress and beans, where vegetables come from.

Pupils make fruit kebabs using the skills of chopping and slicing. They decorate biscuits using squeezing, spreading and mixing. They make gingerbread men – weighing and measuring (number of spoons).

Through creative play, pupils have access to a wide range of materials with which to build, experiment and design their own models, joining using glue and tape, using wheels and cutting accurately.

National Curriculum Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

National Curriculum Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

Key Stage One		
Pupils should be taught to:	Year 1	Year 2
Design		
design purposeful, functional, appealing products for themselves and other users based on design criteria	Freestanding Structures	Wheels and Axles
generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Freestanding Structures	Wheels and Axles
Make		
select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	Freestanding Structures	Wheels and Axles
select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Freestanding Structures	Wheels and Axles
Evaluate		
explore and evaluate a range of existing products	Freestanding Structures (Burj Khalifa)	Wheels and Axles (History of Wheel)
evaluate their ideas and products against design criteria	Freestanding Structures	Wheels and Axles
Technical Knowledge		
build structures, exploring how they can be made stronger, stiffer and more stable	Freestanding Structures	
explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products		Wheels and Axles
Cooking & Nutrition		
use the basic principles of a healthy and varied diet to prepare dishes	Cookery Day	Cookery Day
understand where food comes from	Cookery Day	Cookery Day

Key Stage Two				
Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
Design				
use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
Make				
select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
Evaluate				
investigate and analyse a range of existing products	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	Shell Structures	Levers and Linkages	Monitoring and Control Frame Structures	More complex switches
understand how key events and individuals in design and technology have helped shape the world	Toblerone Packaging	Newcomen Steam Engine 1712	Scratch	James Dyson

Technical Knowledge				
apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Shell Structures			
understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		Levers and Linkages		
understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]				More complex switches
apply their understanding of computing to program, monitor and control their products			Monitoring and Control	
Cooking & Nutrition				
understand and apply the principles of a healthy and varied diet	Cookery Day	Cookery Day	Cookery Day	Cookery Day
prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	Cookery Day	Cookery Day	Cookery Day	Cookery Day
understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	Cookery Day	Cookery Day	Cookery Day	Cookery Day



St Clare's Primary School

Design & Technology Long Term Plan – 2023/24

	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
EYFS				Create collaboratively sharing ideas, resources, and skills Shares their creations , explaining the process they used	Safely uses and explores a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	
Year 1					Cooking Day How can I design, make and evaluate a strong chair for Baby Bear for use in role-play?	
Year 2		Cooking Day			How can I design, make and evaluate a cart for Mr Smith to use around the school?	
Year 3						Cooking Day How can I design, make, and evaluate packaging for teachers to stop biscuits being broken in the staffroom?

Year 4		<p>Cooking Day</p> <p>How can I design, make and evaluate a card with moving parts for a family member to celebrate Christmas?</p>				
Year 5		<p>How do you design, make and evaluate a bird hide for St Clare's children for observing birds whatever the weather?</p>		Cooking Day		<p>How do you design, make and evaluate a bird hide for St Clare's children for observing birds whatever the weather?</p>
Year 6						<p>Cooking Day</p> <p>How can I design, make and evaluate an alarm for lorry drivers to protect them from theft?</p>

Strands of learning

These strands of Design and Technology run through the St Clare's curriculum:

Concept	Definition
Mechanisms	A system of parts working together
Structures	An object constructed from several parts
Food	Understanding where food comes from, its nutritional value and how to prepare and cook a variety of dishes
Textiles	Working with a variety of fibrous materials
Mechanical Systems	Systems that manages the power of forces and movements to accomplish a task
Electrical Systems	Systems made up of various electrical components that allow for transporting electrical energy for a particular purpose

Mechanisms

A system of parts working together

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day
				Frame Structures	

Structures

An object constructed from several parts

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day
				Frame Structures	

Food

Understanding where food comes from, its nutritional value and how to prepare and cook a variety of dishes

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day
				Frame Structures	

Textiles

Working with a variety of fibrous materials

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day
				Frame Structures	

Mechanical Systems

Systems that manages the power of forces and movements to accomplish a task

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day

Electrical Systems

Systems made up of various electrical components that allow for transporting electrical energy for a particular purpose

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Freestanding Structures	Wheels and Axles	Shell Structures	Levers and Linkages	Monitoring and Control	More Complex Switches
Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day	Cooking Day
				Frame Structures	

Year 1 – How can I design, make and evaluate a strong chair for Baby Bear for use in role-play?



St Clare's Unit Plan:

I can investigate existing products
I can practise different joining techniques
I can practise making a stable structure
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

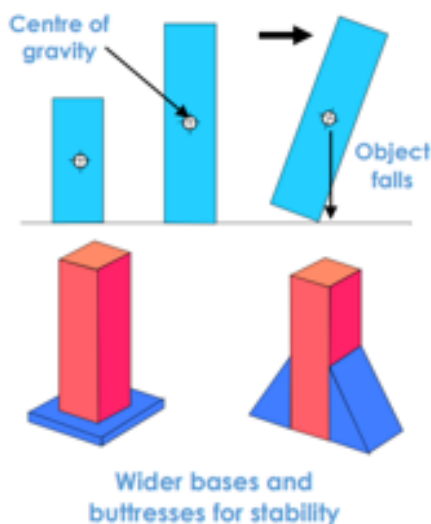
- Look at Burj Khalifa – world's largest freestanding structure

Links to prior learning:

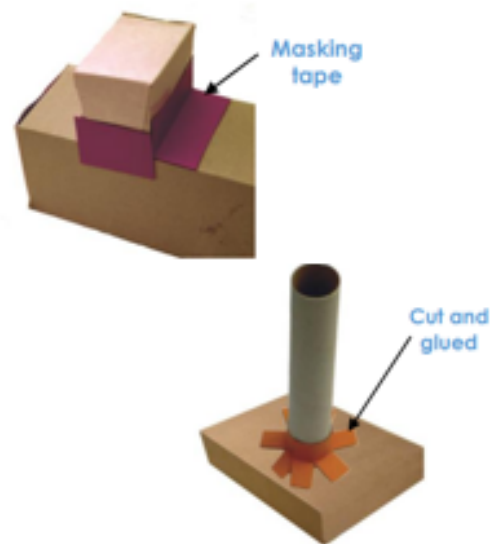
- Story of Goldilocks and the Three Bears

How can I design, make and evaluate a strong chair for Baby Bear for use in role-play?

Making Structures Stable



Joining Materials



Key Vocabulary

Freestanding structure – a structure that stands on its own foundation or base without attachment to anything else.

Frame structure – a structure made from thin components e.g. tent frame.

Shell structure – a hollow structure with a thin outer covering.

Stability – in relation to a freestanding structure, the extent to which it is likely to fall over if a force is applied.

Buttress – a structure added to a wall, tower or framework to make it more stable and/or reinforce it.

Brick bonding – arranging bricks in a wall to improve the performance of the structure or improve its appearance.

Mock-up – 3-D representation of a product.



Year 1 – Where does fruit come from, why is it healthy and what dish can I make with it?



St Clare's Unit Plan:

I can prepare a dish using safe chopping techniques
I can explain why fruit is a healthy snack
I can explain where some fruit comes from

Learning enhancements:

- Children sample their own recipes

Links to prior learning:

- EYFS – making fruit kebabs

Where does fruit come from, why is it healthy and what dish can I make with it?

Safe Chopping Techniques



The Bridge



The Claw

Fruit Salad

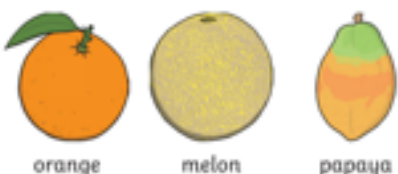


Where fruit comes from

Grow in the UK:



Do not grow naturally in the UK:



Fruit and Vegetables

Fruit and vegetables are healthy as they contain less sugar and lots of vitamins which are good for our bodies.



Year 2 – How can I design, make and evaluate a cart for Mr Smith to use around the school?



St Clare's Unit Plan:

I can investigate existing products
I can practise different methods of attaching wheels
I can practise different ways to attach moving axles
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

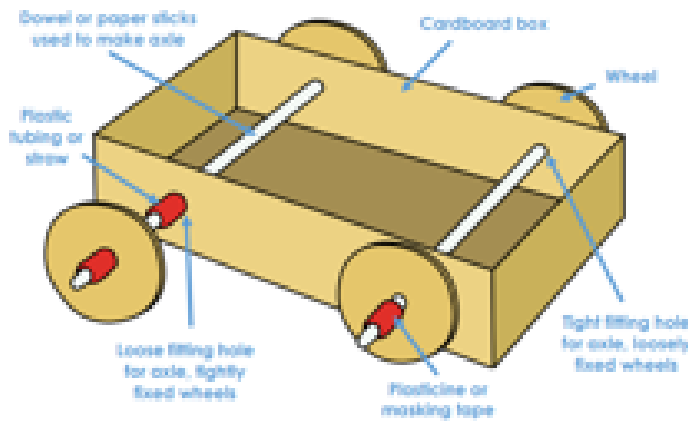
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Links to prior learning:

- Year 1 D & T

How can I design, make and evaluate a cart for Mr Smith to use around the school?

Ways to Fix Wheels



Types of Wheels



Key Vocabulary

Axle – a rod on which one or more wheels can rotate, either freely or be fixed to and turn with the axle.

Axle holder – the component through which an axle fits and rotates.

Chassis – the frame or base on which a vehicle is built.

Friction – resistance which is encountered when two things rub together.

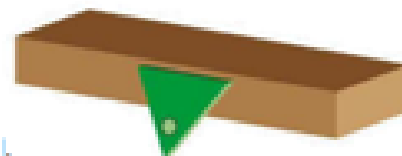
Dowel – wooden rods used for making axles to hold wheels

Ways to Hold Moving Axles

Use pairs of clothes pegs.



Use card triangles.



Use large paper / plastic straws.



Year 2 - Where does bread come from, what can I make with it and how can I make sure it is healthy?



St Clare's Unit Plan:

I can prepare a dish using spreading and grating
I can explain how bread is made
I can describe some healthy and unhealthy sandwich fillings

Learning enhancements:

- Children sample their own recipe

Links to prior learning:

- EYFS – spreading icing
- Year 1 – healthy eating

Where does bread come from, what can I make with it and how can I make sure it is healthy?

Techniques	
Spreading 	Grating 



Types of Fillings

Healthy:

- Banana
- Egg and cress
- Tomatoes
- Lettuce
- Cucumber
- Ham
- Tuna
- Cheese
- Cheese Spread

Unhealthy:

- Crisps
- Chocolate spread
- Peanut butter
- Chips
- Bacon
- Mayonnaise

How bread is made

Seeds are sown in a field.

The seeds grow into wheat which is then harvested.


The wheat is ground down to make flour.

The sacks of flour are driven to the bakery.

A baker mixes flour together with other ingredients such as yeast, sugar, water and salt.

This is put into an oven and baked.

The loaves are then sliced, packaged and delivered to the shops to be sold.




Year 3 – How can I design, make and evaluate packaging for teachers to stop biscuits being broken in the staffroom?



St Clare's Unit Plan:

I can investigate existing products
I can investigate different packaging nets
I can practise strengthening card in different ways
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

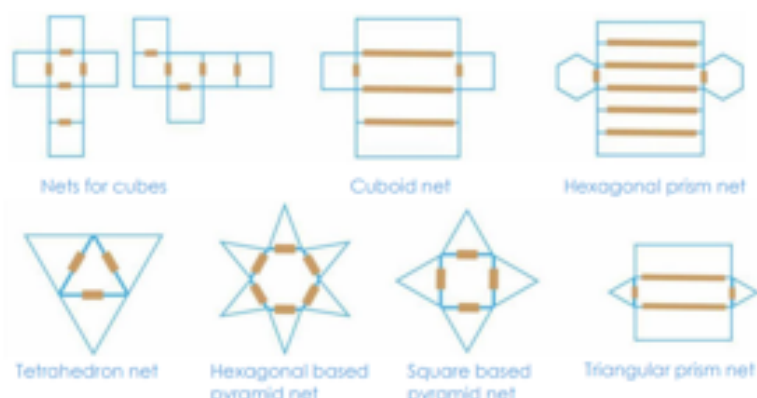
- Story of Toblerone packaging

Links to prior learning:

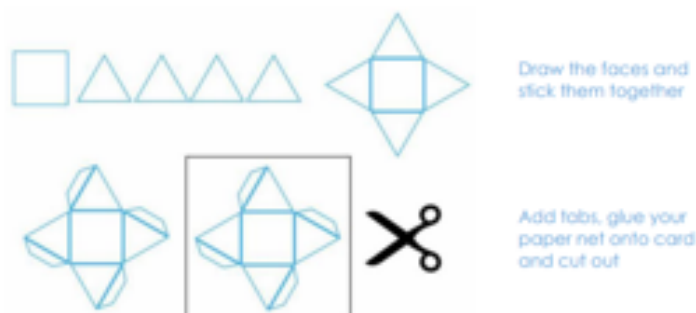
- Maths – 3D shapes
- Previous year's D &

How can I design, make and evaluate packaging for teachers to stop biscuits being broken in the staffroom?

Nets of 3D Shapes



Making Nets

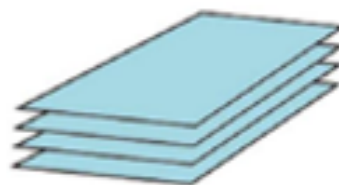


Key Vocabulary

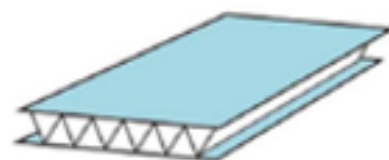
Cuboid – a solid body with rectangular sides.
Edge – where two surfaces meet at an angle.
Face – a surface of a geometric shape.
Font – a printer's term meaning the style of lettering being used.
Net – the flat or opened-out shape of an object such as a box.
Prism – a solid geometric shape with ends that are similar, equal and parallel.
Scoring – cutting a line or mark into sheet material to make it easier to fold.
Shell structure – a hollow structure with a thin outer covering.
Vertex – used to refer to the corners of a solid geometric shape, where edges meet.

Strengthening Card

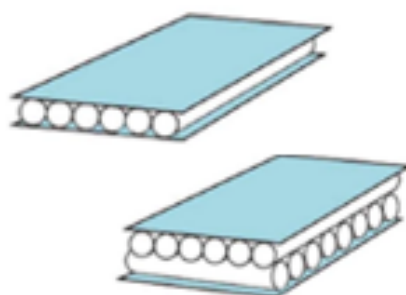
Laminating – Glue together different layers of card.



Corrugating – zig-zag a piece of paper between two pieces of cardboard.



Ribbing – glue together layers of straws between layers of cardboard.



Year 3 – What are the ingredients in a pizza, where do they come from and how can I make one?



St Clare's Unit Plan:

I can prepare a dish using a measuring jug and a rolling pin
I can explain where pizza ingredients come from
I can explain what a balanced diet is

Learning enhancements:

- Children sample their own recipe

Links to prior learning:

- Previous year's cooking curriculum

What are the ingredients in a pizza, where do they come from and how can I make one?

Techniques

Use a measuring jug
Remember to get down to eye level.



Use a rolling pin



Pizza



Where the ingredients come from

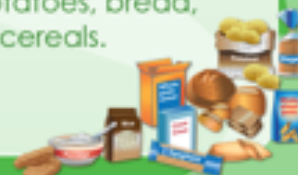
Flour	A Wheat Farm	Supermarket
Butter	A Dairy Farm	Supermarket
Eggs	A Chicken Farm	Supermarket or Butcher
Tuna	The Sea	Fishmonger
Tomatoes	A Tomato Farm	Supermarket
Onions	An Onion Farm	Supermarket
Cheese	A Dairy Farm	Supermarket or Butcher
Peppers	A Vegetable Farm	Supermarket or Greengrocer
Sweetcorn	A Vegetable Farm	Supermarket or Greengrocer
Ham	 A Pig Farm	Supermarket or Butcher

A balanced diet

Eat lots of fruit and vegetables – at least 5 every day.



Have lots of potatoes, bread, rice and other cereals.



Eat some foods from the dairy (or alternatives) food group.



Eat some foods from the Beans, pulses, fish, eggs and meat food group.



Eat a balance and variety of different foods every day.

The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Year 4 – How can I design, make and evaluate a card with moving parts for a family member to celebrate Christmas?



St Clare's Unit Plan:

I can investigate existing products
I can practise using levers and linkages
I can practise making a pop-up item
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

- Learn about Newcomen Steam Engine 1712

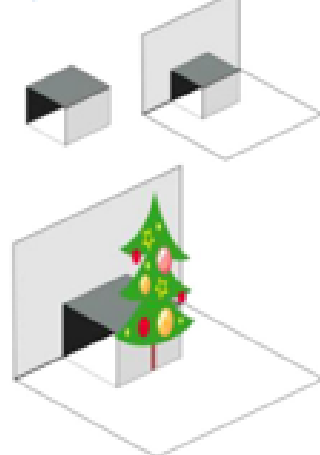
Links to prior learning:

- Previous year's D & T

How can I design, make and evaluate a card with moving parts for a family member to celebrate Christmas?

Pop-Up Mechanism

Making a pop-up from a small section of a recycled box:



1. Cut a slice off a small box.
2. Glue two sides to the paper.
3. Stick a picture to pop up on the front.

Lever and Linkage Mechanisms

Lever and linkage mechanisms usually produce oscillating or reciprocating movement:



Linear – in a straight line



Reciprocating – backwards and forwards in a straight line e.g. a slider



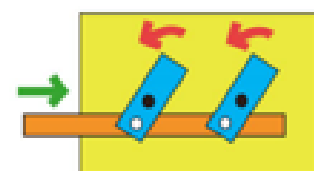
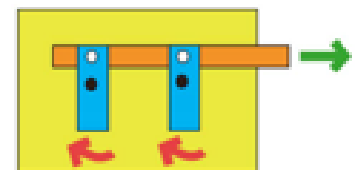
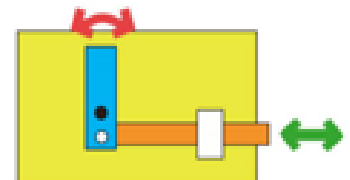
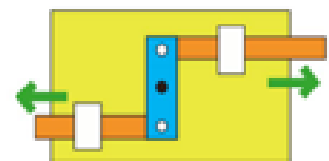
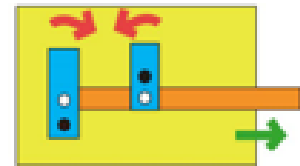
Rotary – round and round e.g. a wheel, cam, pulley, gear wheel



Oscillating – backwards and forwards in an arc e.g. a lever

Levers and Linkages

● Fixed pivot
○ Loose pivot



When you push the card strip (input movement), the two levers move (output movement).

Key Vocabulary

Mechanism – a device used to create movement in a product.

Lever – a rigid bar which moves around a pivot. **Linkage** – the card strips joining one or more levers to produce the type of movement required.

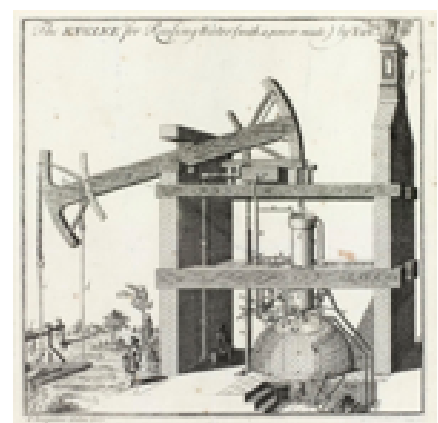
Slot – the hole through which a lever is placed to enable part of a picture to move.

Guide or bridge – a short card strip used to keep lever and linkage mechanisms in place and control movement.

Loose pivot – a paper fastener that joins card strips together.

Fixed pivot – a paper fastener that joins card strips to the backing card.

System – a set of related parts or components used to create an outcome. Systems have an input, process and an output. In a lever and linkage mechanism, the 'input movement' is where the user pushes or pulls a card strip. The 'output movement' is where one or more parts of the picture move.



Year 4 – Where does pasta come from, what can I make from it and which food group does it belong to?



St Clare's Unit Plan:

I can prepare a dish using weighing and boiling
I can explain how pasta is made
I can describe the main food groups

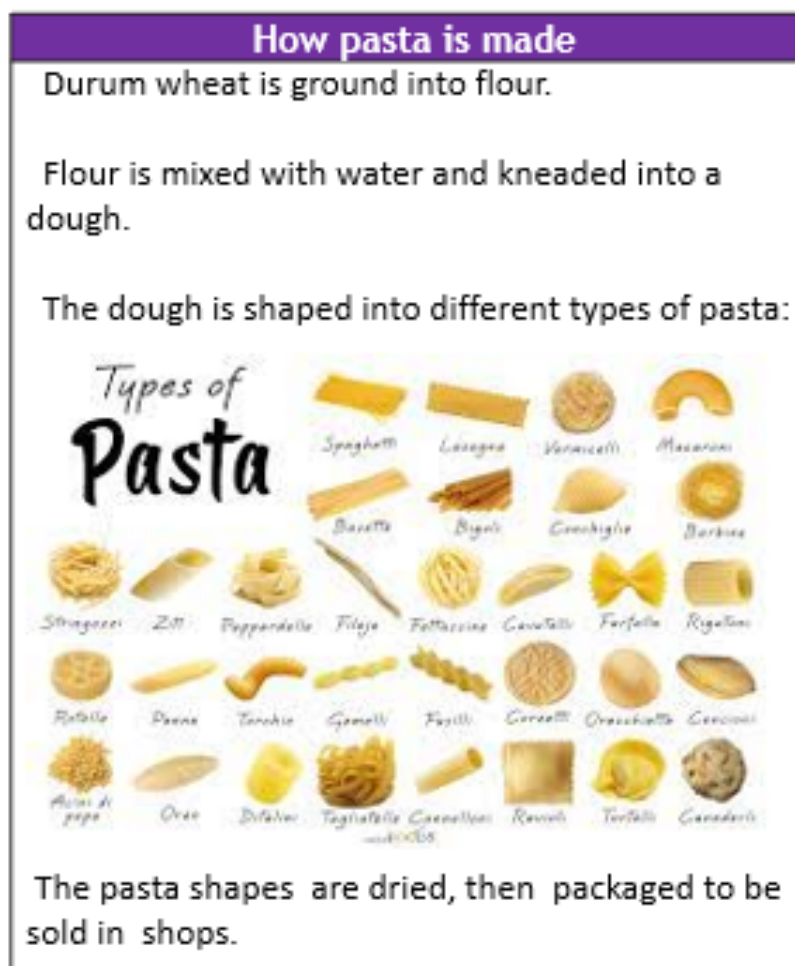
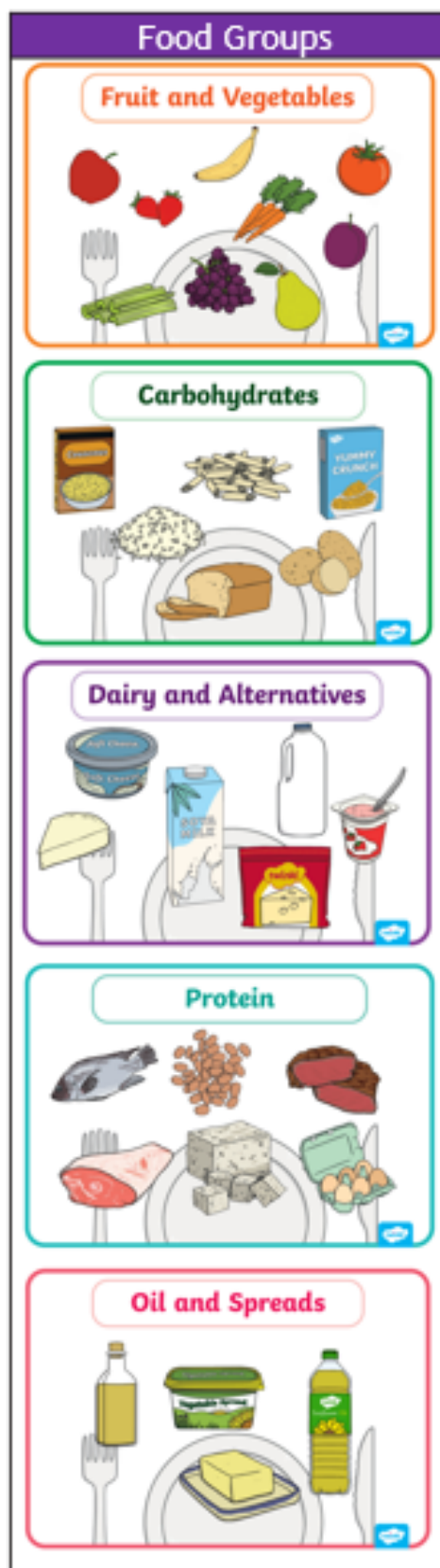
Learning enhancements:

- Children sample their own recipe

Links to prior learning:

- Previous year's cooking curriculum

Where does pasta come from, what can I make from it and which food group does it belong to?



Year 5 – How can I design, make and evaluate a night light for a young child to make them feel safe at night?



St Clare's Unit Plan:

I can investigate existing products
I can practise using a Crumble controller
I can investigate how much light passes through different fabrics
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

- Learn about Thomas Edison

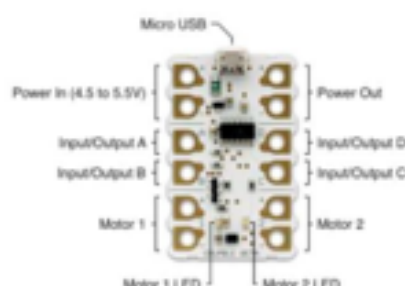
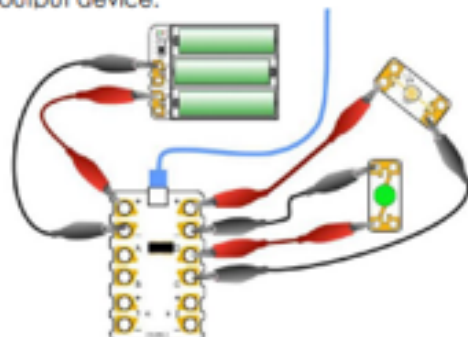
Links to prior learning:

- Year 4 - Science – electricity
- Previous year's D & T

How can I design, make and evaluate a night light for a young child to make them feel safe at night?

Connecting up a Crumble

This arrangement is for an automatic nightlight, using a light dependent resistor (LDR) as the monitoring or input device and a light emitting diode (LED) as the output device.



Programming a Crumble for an Automatic Nightlight

The LED connected to output D switches on when it goes dark. Change the value of the LDR connected to terminal C so that the system is activated at different light levels.



LED – connect +ve to D and -ve to Power Out

LDR – connect -ve to C and +ve to Power Out

Key Vocabulary

Program – a sequence of instructions that can be used to control electrical components.

Microcontroller – a device that can be programmed to control how an electrical product operates.

Light emitting diode (LED) – an output device that glows when electricity is passed through it.

System – a set of related parts or components that together achieve a desired outcome.

Output devices – components that produce an outcome e.g. bulbs, motors and buzzers.

Input devices – components that are used to control an electrical circuit e.g. switches.

Process – how a computer program controls one or more output devices.



Year 5 – How can I design, make and evaluate a night light for a young child to make them feel safe at night?



St Clare's Unit Plan:

I can investigate existing products
I can evaluate different types of joining techniques
I can evaluate different structures
I can evaluate different materials
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

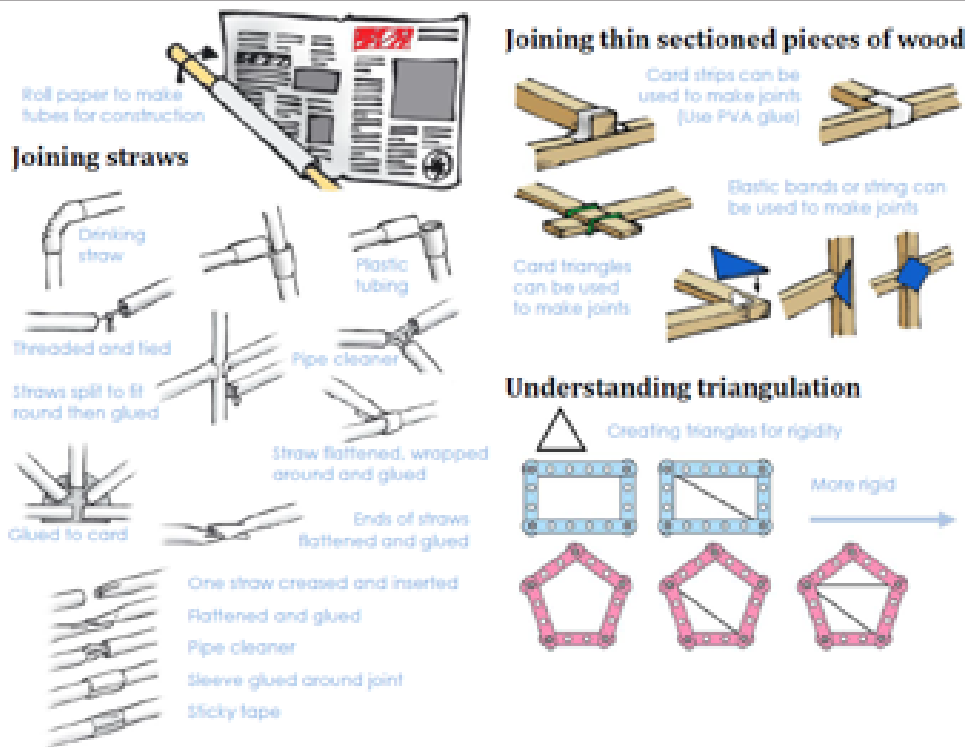
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Links to prior learning:

- Science curriculum - birds
- Previous year's D & T

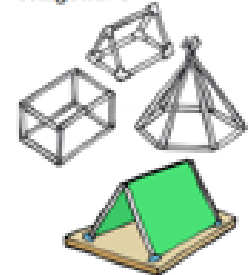
How do you design, make and evaluate a bird hide for St Clare's children for observing birds whatever the weather?

Building Frame Structures

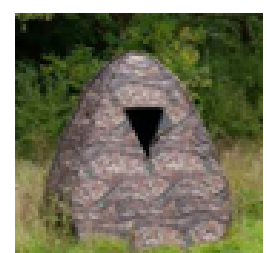
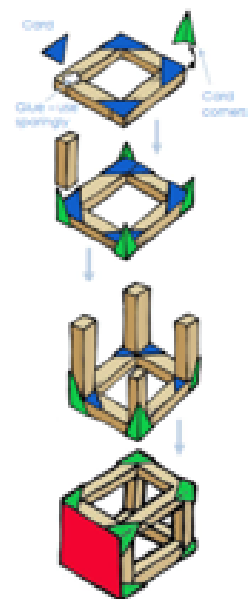


Making Small-Scale Frame Structures

Using straws



Using square section wood



Key Vocabulary

- **Modelling** – the process of making a 3-D representation of a structure or product.
- **Compression** – the application of pressure to squeeze an object.
- **Strut** – a part of a structure under compression.
- **Tension** – a force pulling on a material or structure.
- **Tie** – a part of a structure under tension.
- **Diagonal** – a straight line that goes from one corner to another inside a shape.
- **Horizontal** – a line that is parallel to the ground.
- **Vertical** – a line that is at right angles to the ground.
- **Triangulation** – the use of triangular shapes to strengthen a structure.
- **Frame structure** – a structure made from thin components e.g. tent frame.

Year 5 – How can I eat healthier, cook a healthy meal and know where all the ingredients have travelled from?



St Clare's Unit Plan:

I can prepare a dish, including peeling and frying an onion
I can explain how I can eat healthier
I can explain what food miles are

Learning enhancements:

- Children sample their own recipe

Links to prior learning:

- Previous year's cooking curriculum

How can I eat healthier, cook a healthy meal and where have the ingredients travelled from?

Eating Healthier

- Base your meals on starchy foods.
- Eat lots of fruit and vegetables.
- Eat more fish.
- Cut down on saturated fat and sugar.
- Try to eat less salt – not more than 6g a day.
- Get active and try to be a healthy weight.
- Drink plenty of water.
- Don't skip breakfast.

Techniques

Peeling an onion



Frying



Food Miles

Some foods come from a long way away. This is bad for the environment as they create pollution when they are transported.

We should therefore eat food which is in season in the UK to reduce the amount of food miles in the meals that we eat.



Mushroom & Chickpea Curry



Year 6 – How can I design, make and evaluate an alarm for lorry drivers to protect them from theft?



St Clare's Unit Plan:

I can investigate existing products
I can investigate different switches and sensors
I can investigate controlling a switch or sensor using a Crumble
I can design my product
I can make and modify my own product
I can evaluate my final product

Learning enhancements:

- Learn about the history of the Scratch coding programme


Links to prior learning:

- Computing – Scratch coding
- Previous year's D & T

How can I design, make and evaluate an alarm for lorry drivers to protect them from theft?

Switches and Sensors

Switches and sensors



- Micro-switch – a switch that can operate as push-to-break switch or a push-to-make switch.
- Push-to-break switch – a switch turned off by pressing it.
- Push-to-make switch – a switch turned on by pressing it.
- Reed switch – a switch operated by a magnet.
- Tilt switch – a switch that works when tilted at an angle.
- Toggle switch – a switch operated when a lever is pressed.
- Light dependent resistor (LDR) – a sensor that operates when light is shined on it.

Push-to-make switch
When you push, the electricity flows through the circuit, but when you release it the circuit is broken and the switch is off.

Push-to-break switch
The switch is off while the button is pushed, but returns to its 'on' position when button is released.

Reed switch
Activated by a magnet which closes the contacts.

Tilt switch
When tilted a ball bearing bridges the contacts inside, completing the circuit.

Standalone control box

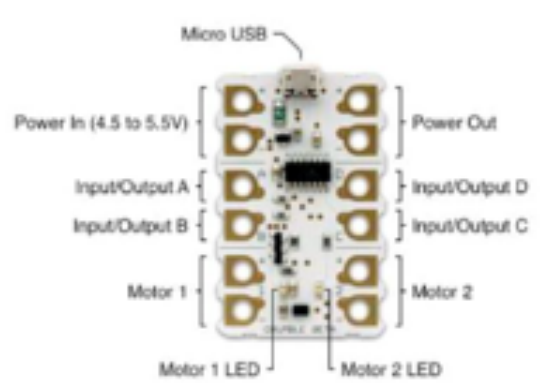
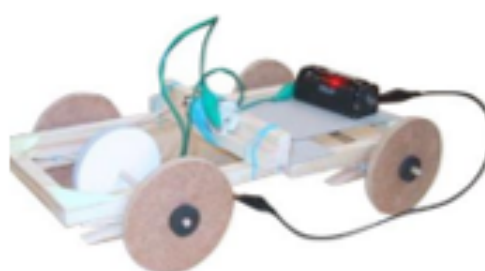
Interface control box

```

graph TD
    Start([Start]) --> Input1{Is Input 1 on?}
    Input1 -- No --> Start
    Input1 -- Yes --> Output1[Turn Output 1 on]
    Output1 --> Delay[Delay 8]
    Delay --> Output2[Turn Output 1 off]
    Output2 --> Start
    
```

Example control program

Using Crumble Controller

Key Vocabulary

Modelling – to realise and manipulate ideas in a tangible form. • **Open switch** – when a switch is positioned such that electricity cannot flow through it.

Closed switch – when a switch is positioned such that electricity can flow through it.

Normally open – the term used to describe when a switch is in the off position, i.e. the switch is open and no electricity can flow when the button on not pressed.

Normally closed – the term used to describe when a switch is in the on position i.e. the switch is closed and electricity can flow when the button is not pressed

Computer control input – when a switch, such as a micro switch, sends a signal to a computer control box to activate a sequence of events such as a buzzer or light being used to attract attention or alert people.

Output devices – components that produce an outcome e.g. bulbs and buzzers.

Input devices – components that are used to control an electrical circuit e.g. switches or sensors

Year 6 – What can I cook using some seasonal vegetables I have grown and how can I persuade others to eat more healthily?



St Clare's Unit Plan:

I can prepare a dish, including making a sauce and grilling
I can persuade others to eat more healthily
I can explain when some fruit and vegetables are in season

Learning enhancements:

- Children sample their own recipe

Links to prior learning:

- Previous year's cooking curriculum

What can I cook using some seasonal vegetables I have grown and how can I persuade others to eat more healthily?

Vegetable & Macaroni Cheese



Techniques

Making a Sauce



Grilling



Tips for eating more fruit

- Always have a piece of fruit in your bag
- Try a variety of different fruits
- Add some fruit to your breakfast and have some for your break time snack
- Eat more dried fruit
- Freeze fruit when it is in season
- Add fruit to your meals, not just desserts
- Add fruit to pancakes and cereal

Seasonality

January Carrots & kale 	February Leeks & savoy cabbage 	March Spring Greens 	April Cauliflower 
May Rhubarb, asparagus, & spinach 	June Strawberries, peas & broad beans 	July Cucumber, curly lettuce & cherries 	August Cos lettuce, plums & raspberries 
September Courgette, runner beans & blackberries 	October Cox apples, squash & sweetcorn 	November Potatoes & red cabbage 	December Brussel sprouts & white cabbage 

Adapted from materials available at www.educationcity.co.uk

