

Design & Technology Knowledge Organisers

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Nursery

Designing

Key Knowledge

What are you making?
What tools will you need?

Making

Key Knowledge

What materials do you need?
Can you follow a set of instructions or use an image to make it?

Tools

Key Knowledge

Scissors – Easigrip scissors
Masking tape



Key vocabulary

Put together	stick
cut	add
make	change

Development Matters Statements

Nursery

Explore different materials freely, to develop their ideas about how to use them and what to make.
Develop their own ideas and then decide which materials to use to express them.
Join different materials and explore different textures.

Reception

EYFS: D&T

Prior Learning

Facts you have learned before

- Making simple cuts with scissors.
- Using construction blocks (duplo, lego)
- Choosing materials to use for a purpose.

Exising products

Key Knowledge

How do you think this model was made?
What could you use to make something similar?

Key vocabulary

join	fold	material	stick
cut	decorate	design	texture
imagination	create	chop	feel

Designing

Key Knowledge

What would you like to make?
Can you plan your idea?
Which material do you think would be best?

Evaluating

Key Knowledge

Do you like what you have made? Why?
Would you like to change anything on your model?
What did you find easy/hard about making it?

Development Matters Statements

Reception

- Explore different materials freely, to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.

ELG

- Create collaboratively, sharing ideas, resources and skills

Making

Key Knowledge

How could you join the pieces together?
What else could you try?
How could you decorate your model?
How can you fix any problems?

How can I decorate my model?

ribbons	buttons	feathers	googly eyes
			



2 fingers underneath



1 thumb at the top



Year 1

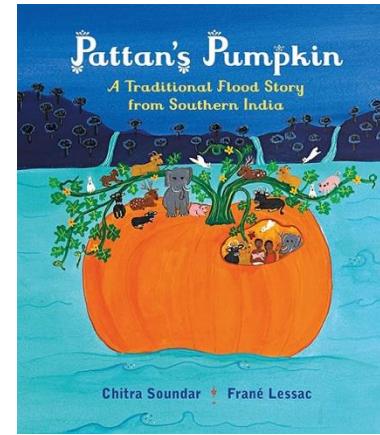
Year 1: D&T – Pumpkin Curry

Prior Learning

- Names of fruits and vegetables
- Holding knives, forks and spoons appropriately. .

Key Knowledge

Curry is a traditional food from India. It is served with rice. It can sometimes be spicy.



Design & Technology – Cooking and Nutrition

Key knowledge

Meat (chicken, beef, pork) comes from animals.



cut with a knife

Fruits and vegetables are grown from plants.



grate with a grater

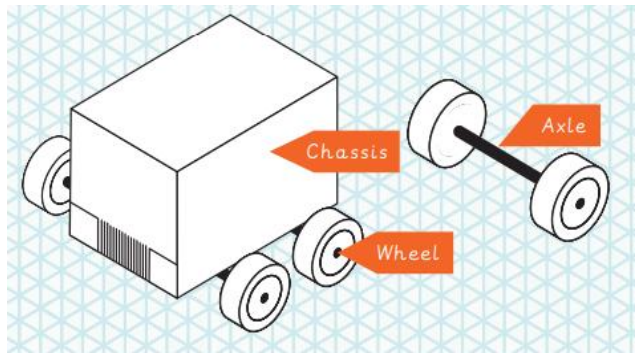
Key Vocabulary

<p>cut</p>	<p>Break food into smaller parts using a knife.</p>
<p>grate</p>	<p>Shredding food into small pieces by rubbing it on blades.</p>
<p>healthy</p>	<p>Food that is good for you helps you feel well and have plenty of energy.</p>

Year 1: D&T - Vehicles

Prior Learning

- Exploring how to attach materials together (glue, tape).
- Using scissors safely and appropriately.



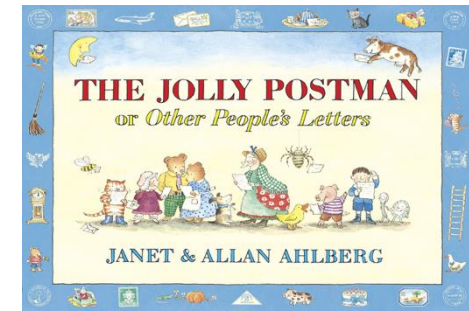
Technical Knowledge - Key Knowledge

The wheels need to be attached to an axle. The axle needs to fit inside the axle holder but must not be attached to the structure otherwise the wheels will not turn properly.



Designing – Key knowledge

A design criteria is a list of things what I create needs to do, or what it needs to include.



Key Vocabulary

axle



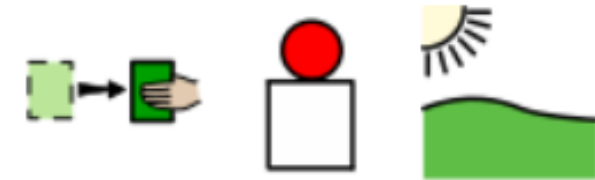
A bar that goes through the wheels, keeping them in place and allowing them to turn.



wheel



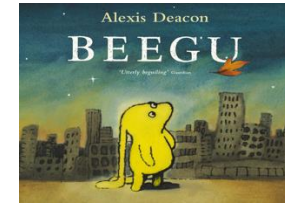
A circular object that allows something move easily over the ground.



Year 1: D&T - Playground games

Prior Learning

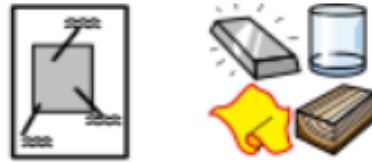
- Communicating ideas through talking.
- Exploring decorative techniques (feathers, sequins, colours)



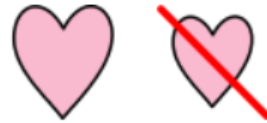
Key knowledge

Design

If I draw my design, I can add labels to say what it will be made out of and other materials I will need to help me to make it.



I can also talk about real products that already exist and talk about what I like about them and what I don't.



Key Vocabulary

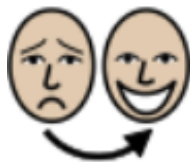
decorate



To make something look nicer by adding extra items or images.



improve



To make better.



design



A plan or drawing to show the look and function of a product.



Year 1: D&T - Wigs

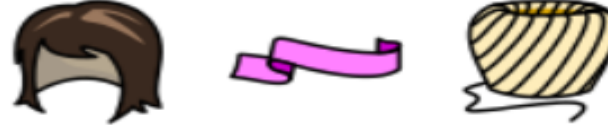
Prior Learning

- Attaching materials with tape and glue.
- Using tools and equipment safely (graters, knives, scissors).

Design and Technology

Key knowledge

A wig is a covering for the head, made of real or not real hair. To make our wigs, we can use ribbons, paper, fabric and string.



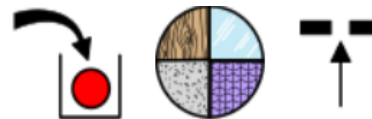
Key knowledge

A stapler is used to join two materials together.



To safely use the stapler:

1. Place the material between the metal opening.



2. Push down with the flat or your hand.

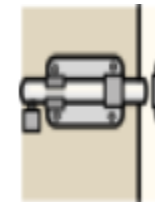


3. Listen for the two clicks so you know it's worked!



Key Vocabulary

secure



Fixed or fastened so as not to give way, become loose, or be lost.



safely



In a way that is not likely to cause or lead to harm or injury.



Year 1: D&T - Rocket

Prior Learning

- Drawing a design.
- Using recycling when making a product.

Designing - Key knowledge

I can draw my design on an iPad or laptop. I can change the colour of my designs to test out what I like best.



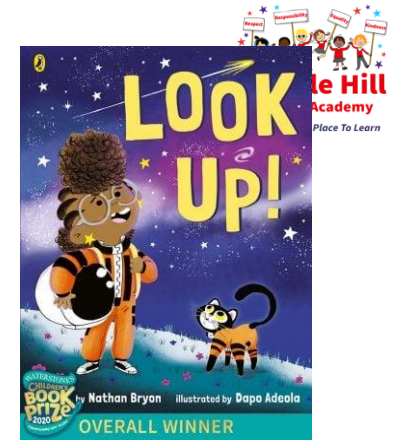
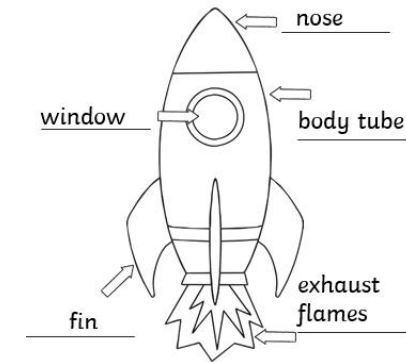
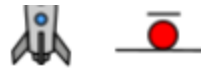
Design and Technology

Key knowledge







A rocket is a vehicle that goes into space.



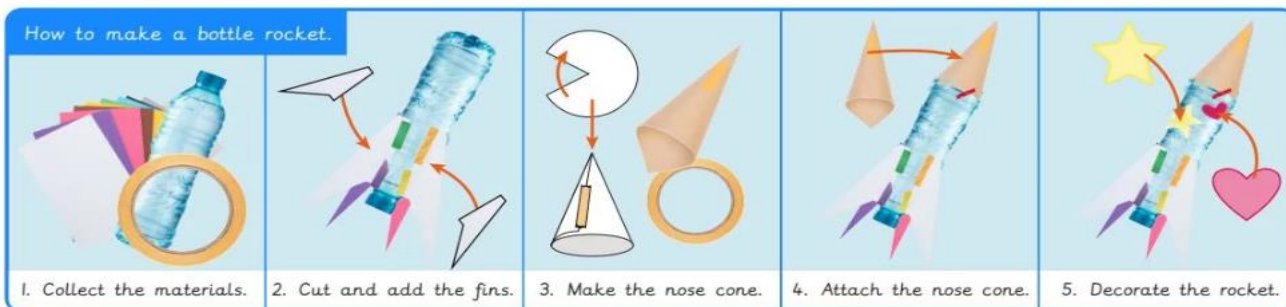
The fins keep it stable



Key Vocabulary

sketchpad	An online app I can use to design my product. I can add labels.    
stable	not likely to wobble or fall over.  

Key knowledge



Year 1: D&T - Moving Pictures

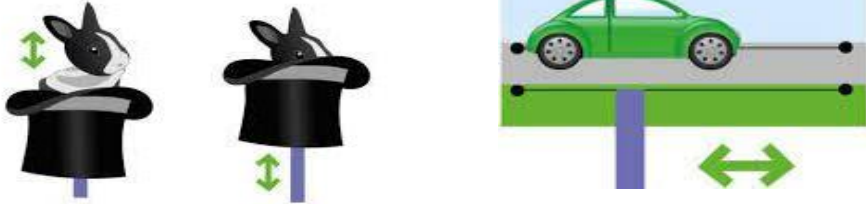
Prior Learning

- Cutting and joining materials.
- Exploring mechanisms (wheels and axles).

Design and Technology – Technical Knowledge

Key knowledge

Levers and sliders create movement in a picture. Movement can be up and down, or side to side.



Key knowledge

To make a small hole for the pivot, a pencil can be used by placing the thin card over a piece of Plasticine or Blu Tack and pressing the pencil through.

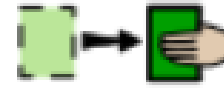


Key Vocabulary

guide



A bridge over the back to control movement. This can be created by using a small piece of card.



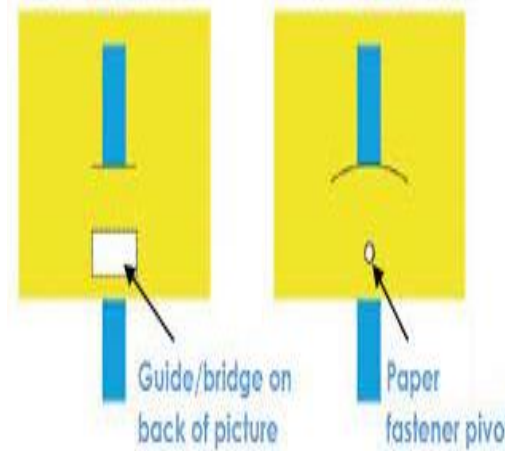
pivot



The point of rotation in a lever system. This can often be created by using a split pin.



.



Simple mechanisms move:



in a straight line



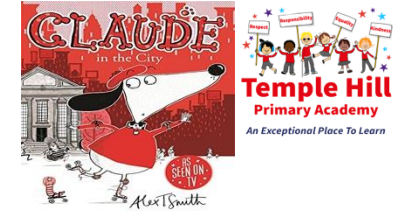
in a straight line, backwards and forwards



round and round



in a curve

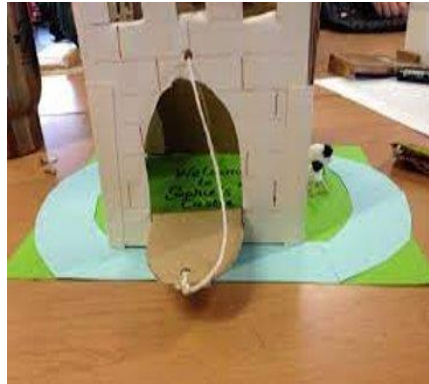


Year 2

Year 2: D&T Drawbridges

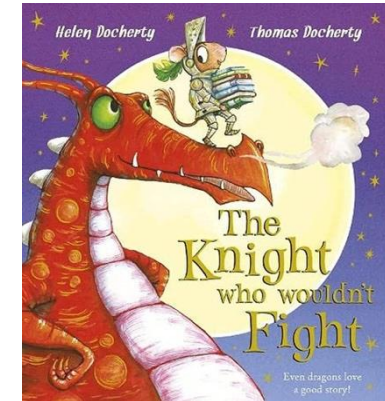
Prior Learning

- I have followed a design criteria.
- I have explored the use of wheels and axles in a product.
- I have safely pierced holes in paper and card.



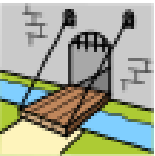





Designing – Key knowledge

Labels in my design show what I need to create my product.
Using images from google is a way I can help with forming my ideas.

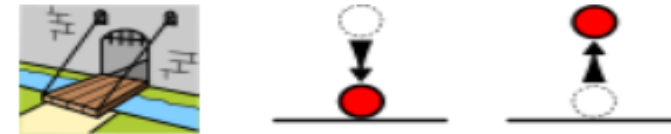


Key Vocabulary

improve 	To make better. 
drawbridge 	Drawbridges provide access across a moat when lowered but can quickly be raised from within to stop enemies from entering. 
mechanism 	A system of parts working together to make something move or work. 

Technical Knowledge

A castle's drawbridge lowers and raises using a winding mechanism.



Winding is the action of twisting around.



I can create this using materials like string, axles or cotton reels.



Year 2: D&T - Fried rice

Peeling - Key knowledge

To peel safely, peel from the middle, away from yourself and rotate.



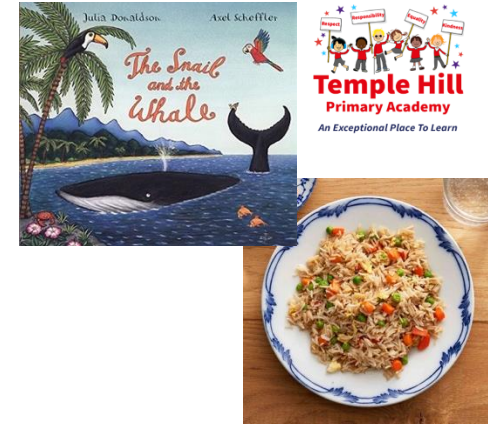
Prior Learning

- Cut and grate foods safely.
- Different types of foods that are healthy and unhealthy.
- Fruits and vegetable are grown.

Key knowledge

Fried rice is a traditional dish that is thought to have originated in China.

The best rice to use is thoroughly-chilled cooked rice because it won't stick together when it's frying.



Cooking and Nutrition- Key knowledge

The 'Eatwell Plate' shows how much of each food group you should aim to eat with your meals.



Key Vocabulary

farmed

If food is farmed, it lives on a farm. For example, cows, sheep and pigs are used for their milk and/or meat.



native

Where something was first grown. Pak choi is native to China.



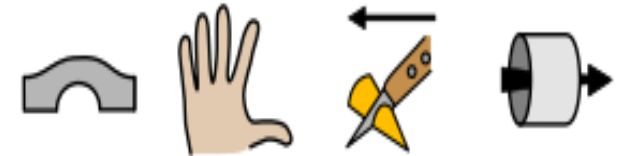
frying

Cooking in hot fat/oil.



Bridge hold - Key knowledge

Using one hand, make a bridge over the vegetable or fruit with fingers on one side and thumb on the other, cut down under the 'bridge'.



Fork hold - Key knowledge

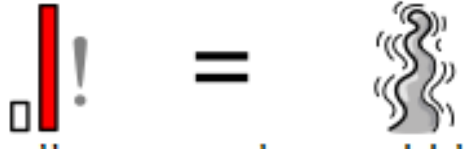
Dig the fork into the food with the fork prongs going downwards towards the chopping board. then chop down



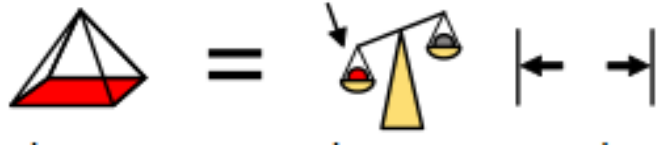
Year 2: D&T - Robots

Key knowledge

As a freestanding structure becomes taller its centre of gravity rises.

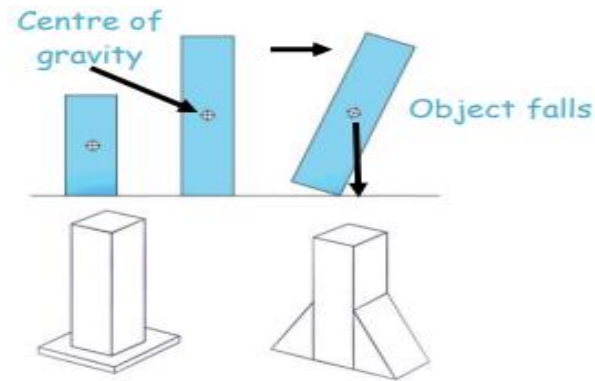


Stability in a structure can be increased by making the base wider or making the base heavier.



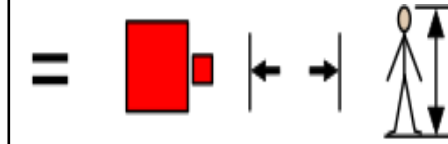
Prior Learning

- Piercing holes safely in paper and card.
- Attaching materials with staplers and tape.



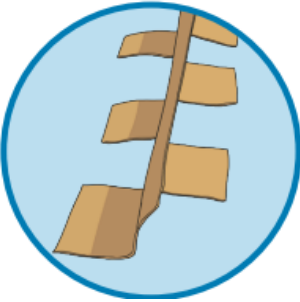
Flange

To use the flange technique, make small cuts from the bottom, heading up towards the middle. Try to make each cut the same size and height and width.



Tabs

To use the tab technique, make small cuts in cardboard towards the middle, making sure each cut is the same. Fold each section to create a base to glue the wall down.



Key Vocabulary

centre of gravity		The point at which weight is evenly dispersed and all sides are in balance	
stable		Something that does not fall over easily	
base		The lowest part or edge of something, especially the part on which it rests or is supported:	

L Brace

To use the L brace technique, take two pieces of cardboard. One will be the base and the other will be the L shape. Use a small rectangle of folded cardboard and use to glue two other pieces together.



Year 2: D&T - Sail

Design and Technology - Technical Knowledge

Key knowledge

A sail is a part of a boat that is made of fabric. Wind blows against the sails, pushing the boat through the water.



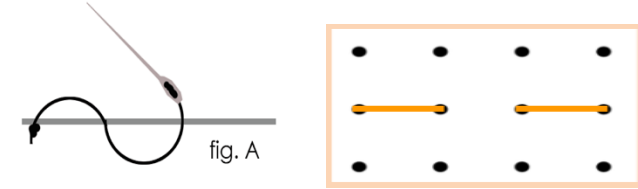
Prior Learning

- Cutting fabric safety.
- Attaching materials together using staples.



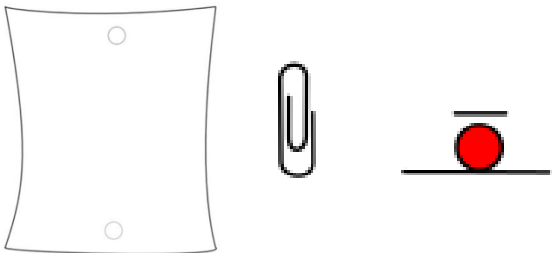
Key knowledge

A running stitch runs back and forth through the cloth without overlapping.

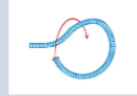


Key knowledge

A template should be created out of card because it is a thick material. Use paper clips to keep it steady on the fabric. With a pencil or a pen, carefully trace around the template there is a guide when cutting.



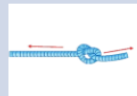
Tie A Knot



1. Create a loop with the thread.



2. Tuck the end of the thread in through the loop.



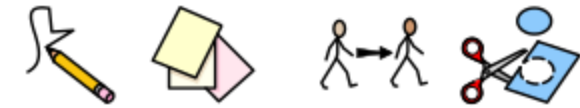
3. Pull the thread tight to create the knot.

Key Vocabulary

template



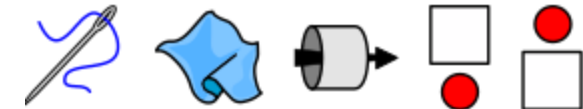
a shaped piece of rigid material used as a pattern for processes such as cutting out, shaping, or drilling.



stitch



A piece of thread sewn in cloth, or the single movement of a needle and thread in and out of the cloth that produces this.



trace



To copy (a drawing, map, or design) by drawing over its lines.



Year 2: D&T – Musical Instrument

Design and Technology

Key knowledge

A musical instrument is an object or device for producing musical sounds. Examples include strings (guitars), woodwind (flute) and percussion (drum). Sound can be produced by shaking, plucking, blowing or striking.



Key knowledge

A labelled diagram is a drawing that is used to show what the intended product should look like.

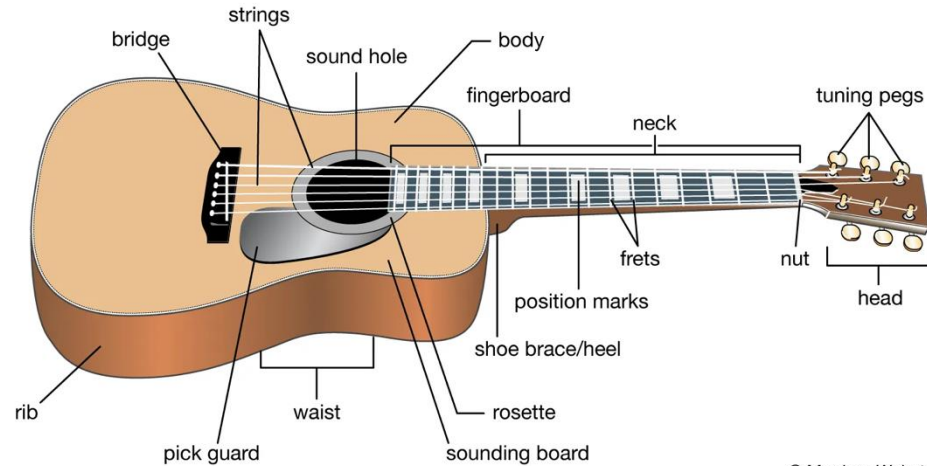


Labels show which materials will be used, how the materials will be combined and joined together and how the different parts will work.



Prior Learning

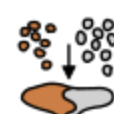
- Attaching materials using glue, tape, staples and stitching.
- Using joining techniques (flange, tabs).
- Using a design criteria.



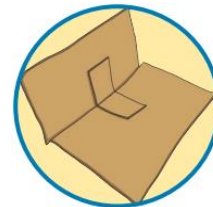
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Key Vocabulary

combining



To join and put together.



Year 3

Year 3: D&T - Purse

Key knowledge: Evaluating

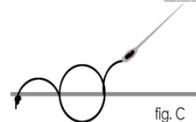
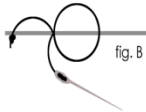
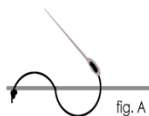
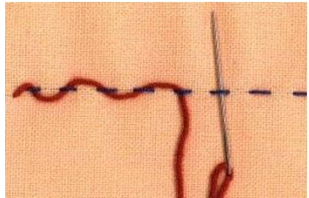
Plastic that has already been repurposed, as well as structures that have been made out of old materials.



I have chosen to repurpose a _____ into a _____ because _____.
 The materials I need to achieve this are _____.
 The functional properties are _____.
 The aesthetic qualities of my product are _____.

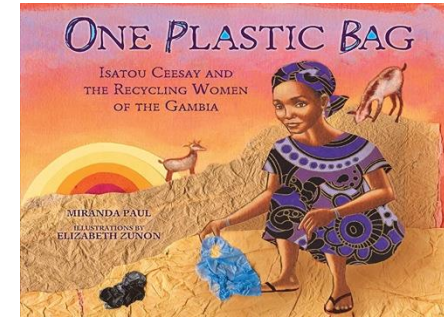
Technical Knowledge - Key knowledge

Using a running stitch, back stitch and Velcro can help me attach two pieces of fabric securely.







Prior Learning

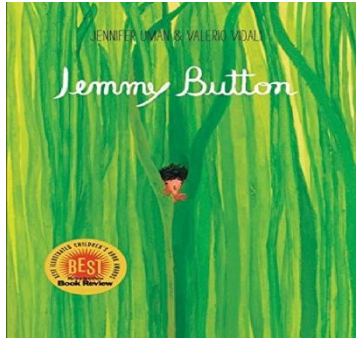
- Attaching materials using glue, tape, staples and stitching.
- I have chosen materials, utensils and equipment that are suitable for their purpose, based on their suitability for a purpose.
- I have followed a template.



Key Vocabulary

purpose		What something is meant to do. The purpose of a mug is to drink liquid out of.
repurpos		Taking something and turning it into something else. A mug can be used as a pencil pot.
aesthetic		Refers to the way a product looks and feels. A mug may have a particular design on or be a different shape.
functional		Having a special activity, purpose, or task. This is usually practical, rather than attractive. A mug needs to have a handle so that it can be held.

Year 3: D&T Boats



Prior Learning

- Communicating ideas through drawing and through the use of ICT.
- Selecting materials and components based on their characteristics.
- Following a design criteria.

Key Vocabulary

water resistant



To resist the penetration of water to some degree but not entirely.

design criteria

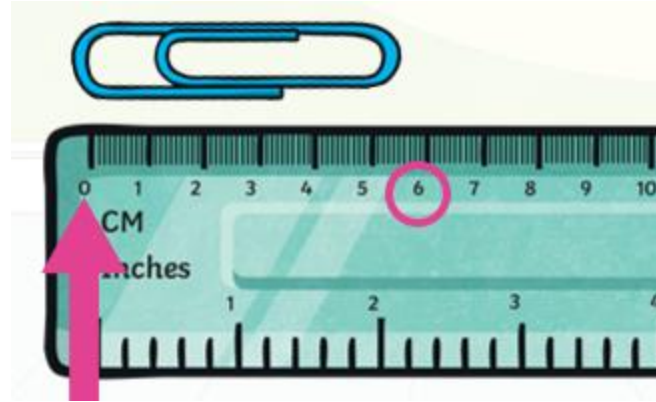


The explicit goals that a project must achieve in order to be successful.

accurate



Correct, exact, and without any mistake



Key Knowledge

Place the 0cm mark on the ruler at one end of the object you are measuring. Make sure you are using the centimetre scale. Do not measure from the end of the ruler

To find the length of the object to the nearest centimetre, round the length up or down to the nearest number on the ruler.

Year 3: D&T Robots

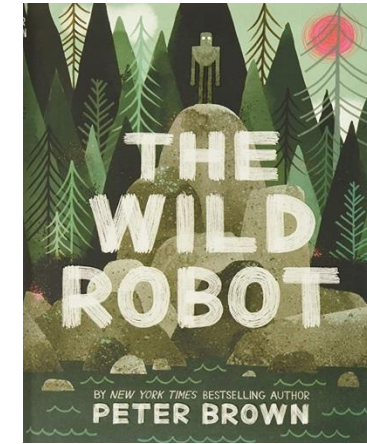
Key Knowledge

Ground-breaking inventions within robotics

- Roomba (Wi-Fi-connected robot vacuum)
- Digit (humanoid robot with the ability to move and carry objects).
- Alexa/Google Home (personal digital assistant activated through voice control).
- Sophia (humanoid robot designed for research, education, and entertainment).

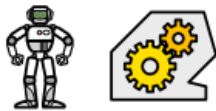
Prior Learning

- Attaching materials using glue, tape, staples and stitching.
- Explored making structures.
- I have chosen materials, utensils and equipment that are suitable for their purpose, based on their suitability for a purpose.
- I have evaluated existing products.



Key Vocabulary

robotics



Robotics is a part of STEM dedicated to the design, construction and use of mechanical robots.

ground-breaking



A new idea; original and creative in thinking.

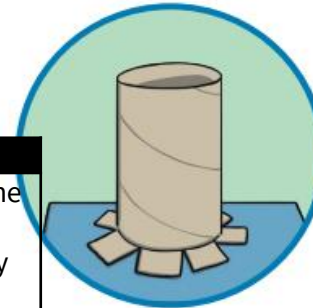
assemble



Fit together the separate component parts

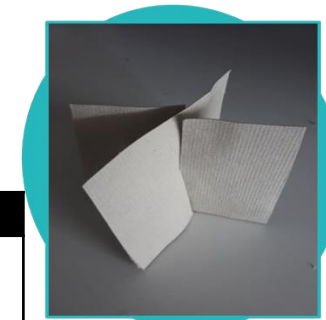
Flange

Make small cuts from the bottom, heading up towards the middle. Try to make each cut the same size and height and width.



Slot

Take two pieces of cardboard and make a cut into a side to attach. Slot one cut inside the other.



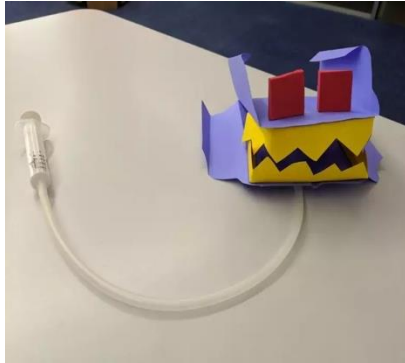
Tying

Hole punch holes into the cardboard. Thread string through both holes. You might need a friend to help you hold while you tie the knot.


Design & Technology – Technical Knowledge


Key knowledge

Movement can be created through levers and linkages, and pneumatics. To make something move, the user needs to operate the chosen mechanism.



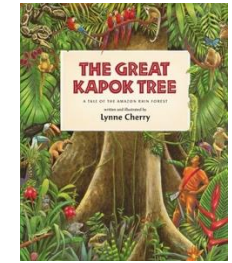
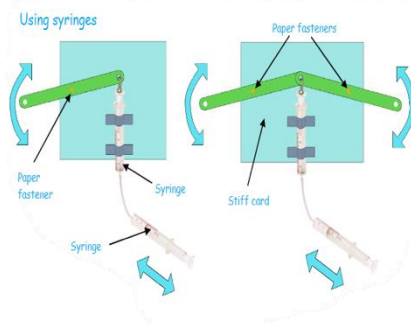
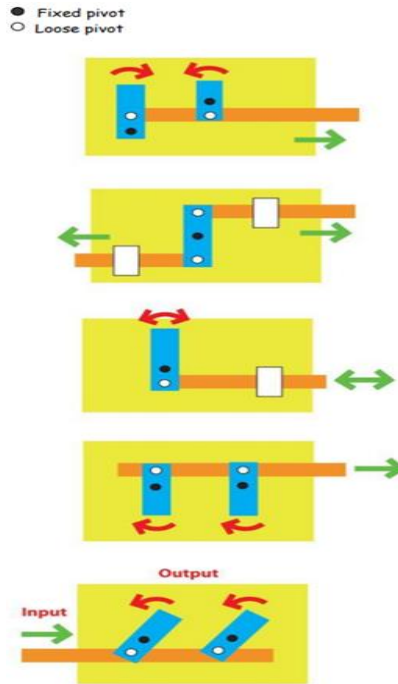
Key Vocabulary

compressor

 Something that is squashed, such as air in a tube

syringe

 A tube with a nozzle and plunger for sucking and blowing air or liquids.

Prior Learning

- Exploring mechanisms (wheels and axles, levers and sliders, winding).
- Attaching materials in different ways.
- Using a design criteria.
- Chopping, peeling and grating ingredients safely and hygienically.



Key knowledge




Food provides us with energy to move and stay warm. The amount of energy and types of nutrients we get is determined by the types of foods we eat. Whole or natural foods contain lots of important nutrients. Unhealthy foods do not.

Most of our fruit, vegetables and meat packages will identify where the food was grown, reared or caught.

Create a claw by partly curling your fingers together into a claw shape. Press the tips of your fingers (nails) against the food to be gripped and then lean your fingers slightly forward of your nails so that you can't see your nails when you look down on your hand.



Key Vocabulary

Grown 	Some foods are grown in the ground or above the ground.
Caught 	Caught food generally refers to the process of catching fish. This means they have been caught in the wild using nets, hand lines, divers or traps to help catch different seafood
Reared 	Reared food means the animals are raised on a farm. Their meat is then processed ready for consumption.

Year 3: D&T - Structures

Design and Technology - Technical Knowledge

Key knowledge

A structure is something that has been made and put together and can stand on its own. Most structures are designed to remain stable and sturdy, meaning they won't break or fall over when something heavy is placed on them.

Key Vocabulary

shell structure



A shell structure is a hollow structure with a thin outer layer

sturdy



Strongly and solidly built.

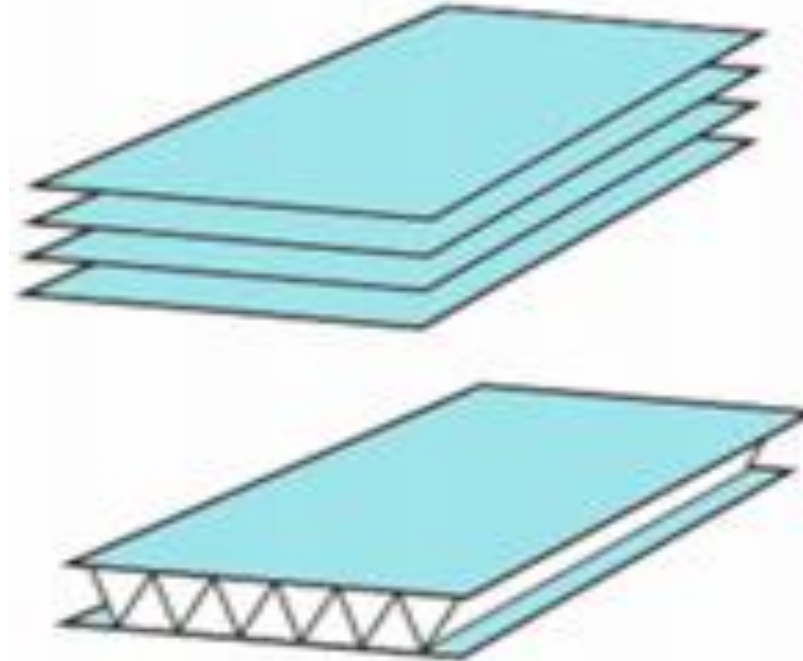
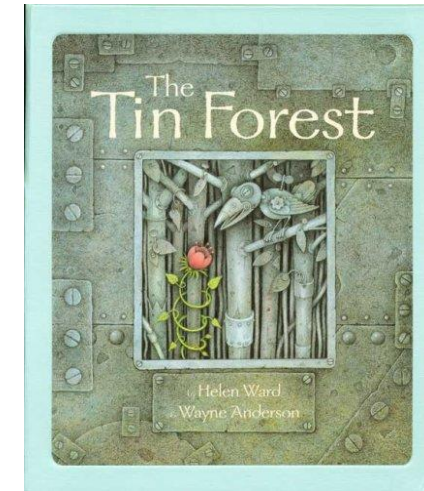
durable



Able to withstand wear, pressure, or damage; hard-wearing.

Prior Learning

- Attaching materials using glue, tape, staples and stitching.
- Explored making structures.
- I have chosen materials, utensils and equipment that are suitable for their purpose, based on their suitability for a purpose.



Key knowledge

To make the structure stiffer, laminating and corrugating are appropriate methods.

Laminating:

Gluing together several layers of card

Corrugating:

Zig-zag a piece of paper or card and glue in between two layers of card .

Year 4

Year 4: D&T – Designing a Hijab

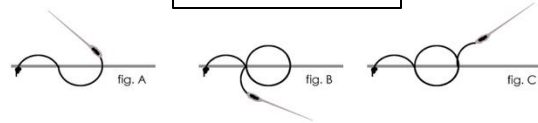
Prior Learning

I have created a labelled design to communicate my ideas, and have created a step-by-step guide for how I am going to create it.
 I have selected materials according to function properties and aesthetic qualities.
 I can measure with some accuracy.
 I have used a running stitch.

Designing - Key knowledge

Hijab is a scarf or clothing worn by Muslim women to cover their hair in order to maintain modesty and privacy either in public or at home. Head coverings can come in many forms; hijab often specifically refers to a cloth wrapped around the head and neck, covering the hair but leaving the face visible

Back stitch



Oversew stitch



Key Vocabulary

Embellishments



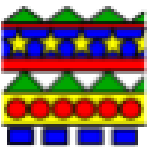
A decorative detail or feature added to something to make it more attractive. This can include ribbon, sequins, beads and buttons.

Seam allowance



the extra space you add around the edge of a pattern piece so that it can be sewn together

Patterns



A decorative design.

Evaluating – Key Knowledge

Explore the Hijab; what are they made from? Why are they used? Do they have certain requirements?



The properties of this material are _____.
 I have chosen to use a ____ stitch because _____.
 I have chosen these patterns because _____.
 I need a seam allowance because _____

Year 4: D&T Lunchboxes + Cooking

Prior Learning

- 2D and 3D shapes
- Cutting and shaping materials.
- Using appropriate tools to cut, chop and grate ingredients.

Cooking and Nutrition - Key knowledge

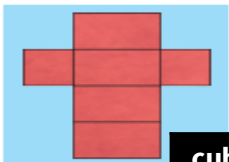
Food is grown where light, food (soil) and water are available to them so they can grow and photosynthesise. This is sometimes within plastic tunnels (polytunnels) or through hydroponics, where water is used instead of soil.

A balanced diet supplies the nutrients your body needs to work effectively. Without balanced nutrition, your body is more prone to disease, infection, fatigue, and low performance.

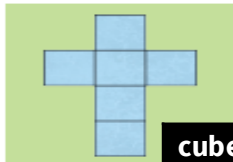


Technical Knowledge - Key knowledge

A net is 2D pattern of a 3D shape that can be folded to form the 3D shape. By scoring, folding and gluing, a net will create a 3D shape.



cuboid






cube



scoring

Key Vocabulary

net		A 2D pattern of a 3D shape that can be folded to form the 3D shape
tabs		A small attachment of the net that contains score lines and when is folded and glued together forms a 3D shape
scoring		the creation of a crease in a piece of paper that will allow it to fold easier and result in a better-looking line.

Cooking and Nutrition - Key knowledge

Baked goods are available in both savoury varieties, such as cheese, or sweet varieties such as chocolate chip.

Top tip – take them out of the pan to cool. This will stop them from getting dry.



Cooking and Nutrition - Key knowledge

Knives can be used to spread ingredients on bread. Butter and mayonnaise are most frequently used to do this.



Create net template with different coloured outline to the dashes.

Year 4: D&T – Cam Toy

Technical Knowledge - Key knowledge

Cams are linkage systems which have followers to convert rotary movement to linear movement).

Making - Key knowledge

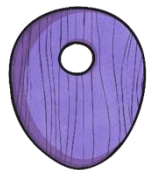
When working with thin card, a hole can be made for the split pin pivot by pressing a pencil through the card on to a piece of plasticine or Blu Tack.

Designing - Key knowledge

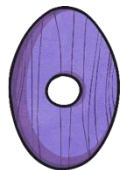
A design criteria sets out what I make needs to do, or what it needs to include. When developing my own, I need to consider available materials and equipment, the purpose of my product and its intended audience.



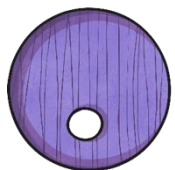
round



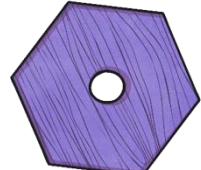
egg-shaped



ellipse



eccentric



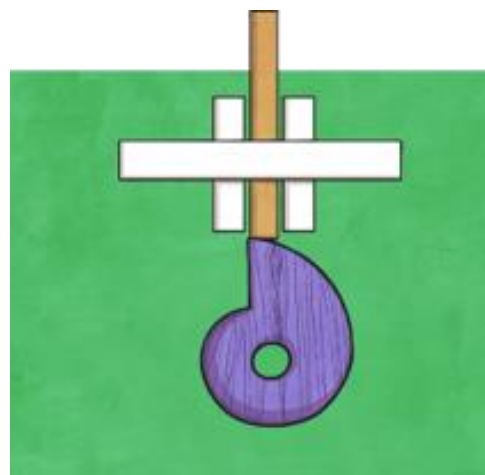
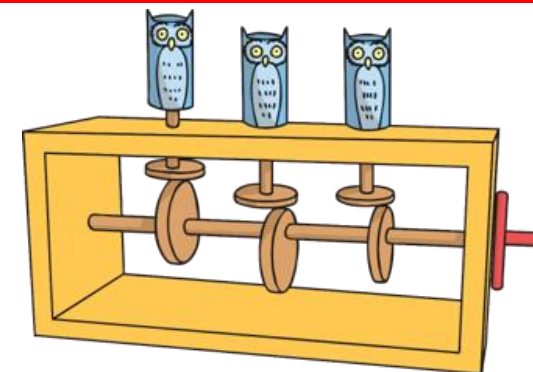
hexagon



snail

Prior Learning

- Explored the use of different mechanisms (levers, sliders, winding, pneumatic).
- Followed and made design criteria.



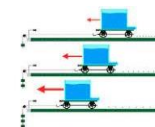
Key Vocabulary

rotary



revolving around a centre or axis.

linear motion



is the movement of an object in one direction from one place to another in a straight line

dowel



a cylindrical rod, usually made of wood, plastic, or metal

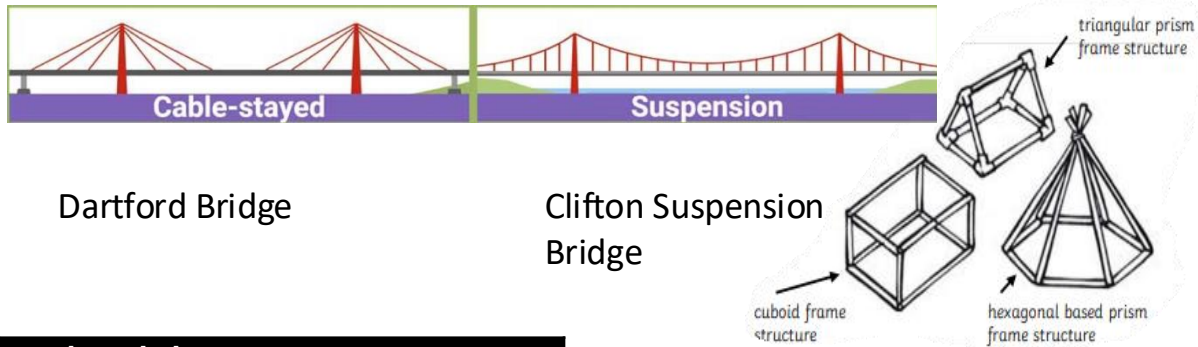
Year 4: D&T - Bridges

Prior Learning

Making structures stable (e.g using flange, L brace, tabs, laminating).

Key knowledge

Isambard Kingdom Brunel was important in the, designing and constructing railway lines, bridges, tunnels and docks.



Dartford Bridge

Clifton Suspension Bridge

Key knowledge

- Carry the blade facing down.
- Do not blow sawdust after cutting.
- Stand up when sawing and keep fingers away from the blade.
- Carefully sand down the rough edges after cutting to avoid splinters.

Making - Key knowledge

Measuring and marking-out is a key part of any practical project. Planning for this will help ensure the success of the project and reduce the chance of mistakes and waste.

Key Vocabulary

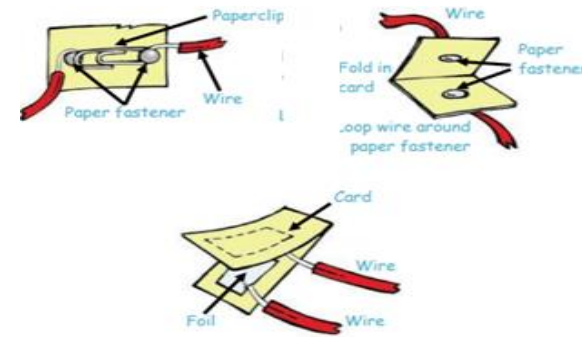
architect		A person who designs buildings or structures.
structure		Something that has been made and put together and can stand on its own
reinforce		To make a structure or material stronger, especially by adding another material or element to it.
durable		Strong: able to withstand pressure or damage.
coping saw		A saw with a narrow D-shaped metal blade, used for cutting curves in wood.

Year 4: D&T - Electrical Toy

Design and Technology - Technical Knowledge

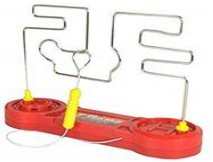
Key knowledge

There are different ways of making handmade switches. They involve using a conducting material between two wires that would complete the circuit when pushed together.



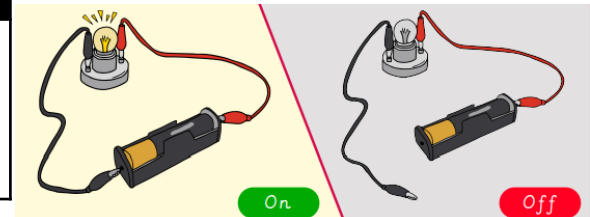
Key knowledge

Lots of toys and appliances use circuits with components including switches to make sounds and lights.



Key knowledge

If there is a break in a series circuit, the electrical current will be cut and all the components will stop working. Causing a break in a series circuit can act as a switch to turn the circuit off.



Key Vocabulary

conductor		A material which allows an electrical current to pass through it.
input		components that are used to control an electrical circuit (switches).
output		components that produce an outcome (bulbs, buzzers).

Year 5

Year 5: D&T - Cheesecake

Key knowledge

Cheesecake is a sweet dessert made from cream with a biscuit base. Its basic recipe is easy to adapt to dietary requirements and personal tastes.



Design - Key knowledge

Surveys can allow for data to be gathered to inform my design and final product. Using software such as Microsoft Form will allow me to reach a wide audience.



Prior Learning

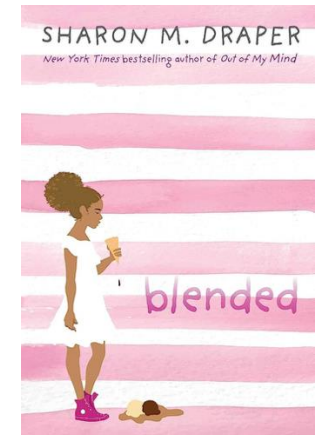
- Choosing and using appropriate equipment for their purpose.
- Mixing, spreading and kneading ingredients.

Key knowledge

A cheesecake can be baked or chilled before serving. The unbaked version is more of a mousse-like sweet dish whereas a baked cheesecake has a custard-like texture. A chilled cheesecake should be eaten within a few hours.

Key knowledge

It is important I prepare food safely to avoid cross contamination and food poisoning. I can do this by washing hands and surfaces, not mixing raw and cooked foods and washing fruits and vegetables thoroughly.



Key Vocabulary

Dietary requirement		food allergies or sensitivities, religious practices and beliefs are some of the main reasons people reply on specific diets or follow restrictions with their food.
vegetarian		a person who does not eat meat or fish, and sometimes other animal products, especially for moral, religious, or health reasons.
vegan		a person who does not eat any food derived from animals and who typically does not use other animal products
adapt		changing something. In cooking, this could include taste, texture, smell and appearance.
Recipe		a set of instructions for preparing a particular dish, including a list of the ingredients required.



Design and Technology

Prior Learning

Measuring and marking-out is a key part of any practical project. Planning for this will help ensure the success of the project and reduce the chance of mistakes and waste.
Scoring is the process of slightly cutting through a material to make it easier to bend or folded. With card, this can be done with scissors but thicker material may need a craft knife.

Key knowledge

Existing Products

Ferry, fishing boat, catamaran, yacht, canoe, rowing boat, Viking longboat, speed boat

Designing

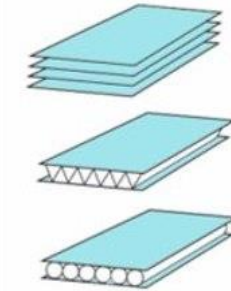
An annotated sketch needs to communicate which materials will be used, the purpose of the product, features of the product, decorative techniques and possibly size/dimension information.

Technical Knowledge





A 3D framework can be strengthened through laminating, corrugating, ribbing and using diagonal struts.

Evaluating

- Was your boat fit for purpose?
- Were the materials you used suitable?
- Were there any limitations in the materials that you used?
- Which elements of your design criteria did you meet/not meet?
- What would you do differently?



Key Vocabulary

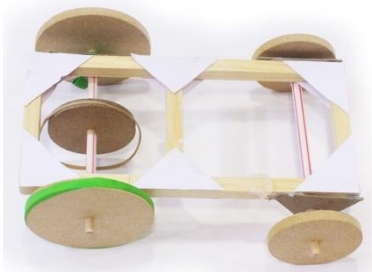
diagonal struts		A piece of wood/card placed diagonally to strengthen a frame.
limitations		A limiting rule or circumstance; a restriction.
hull		The body of a boat.
buoyant		Able or tending to keep afloat or rise to the top of a liquid or gas.

Year 5: D&T – Moon Buggy

Design and Technology – Technical Knowledge

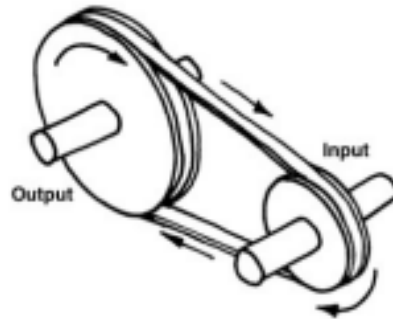
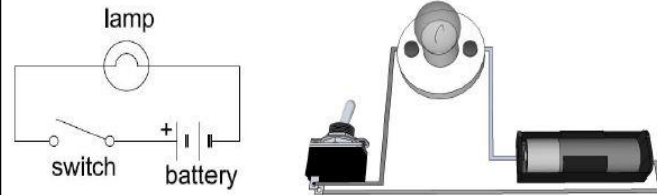
Key knowledge

Pulleys are used to transfer rotating motion, via a belt, from one shaft to another. Car engines for example, often use pulleys connected by a fan belt to transmit power from the engine.



Key knowledge

The components in the circuit can include batteries, switches, lamps and motors, which are joined together using wires.

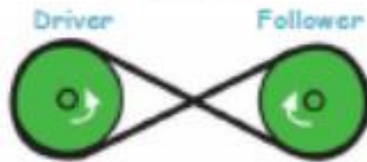


Key Vocabulary

short-circuit		Malfunction or fail. To avoid this, avoid connecting connect the wires from your battery directly together - they must go via the motor.
reinforce		To make stronger. This can be done using card triangles.
crosspiece		A beam or bar fixed or placed across something else.
driver		The gear or pulley that provides the input movement to the system
follower		The gear or pulley that provides the output movement to the system



The pulleys rotate in the same direction



The pulleys rotate in different directions

Year 5: D&T – Seasonality

Whisking puts tiny air bubbles in liquids like eggs, cream or batter, making them thicker.



Sifting powdered ingredients like icing sugar gets rid of any lumps and separates the tiny grains.



When **slicing**, make sure your fingers are well out of the way. Try to make the slices the same size.



Dicing means chopping an ingredient into cubes.



Design and Technology – Cooking and Nutrition

Key knowledge

- Seasonal food is food that is readily available at certain times of year in the area where you live. Seasonal food is not the same in other parts of the world.
- Food can be grown 'out of season' in greenhouses, where the climate can be controlled.
- Food that is not grown in season in Britain can be grown in other countries and imported here. Some foods grown in Britain are available all year round, such as corn, wheat and barley. They can be stored for a long time without going bad.

Key knowledge

There are many ingredients that can change the flavour of a plain recipe. Add a teaspoon of cinnamon and a ½ teaspoon of nutmeg to enhance the flavour.

Swapping out caster sugar for brown sugar will add a caramel-like flavour.

If creating a dairy free recipe, avoid butter and use equal parts coconut and olive or vegetable oil.

For a vegan banana bread, use one of these alternatives

- aquafaba (water from a can of chickpeas),
- egg replacement powder,
- chia/flax seeds mixed with water and left for 10 minutes in the fridge.
- applesauce



Key Vocabulary

adapt



Make something suitable for a new use or purpose.

enhance



Intensify, increase, or further improve the quality, value, or extent of.

Year 5: D&T – Stitched Image

Design and Technology – Technical Knowledge

Key knowledge

Back Stitch – Similar to the running stitch, except that the thread doubles back so that there is no visible spacing between stitches. It is a very strong and secure stitch.

Over Sew Stitch – The over sew stitch is a good way to neaten the raw edge of fabrics. It involves sewing over the edge of the fabrics.

Blanket Stitch – Another way to reinforce the edges of thick materials. This stitch is popular as it is thought to be aesthetically-pleasing.



Key knowledge

There are a range of fasteners that can be used to open & close different compartments on the product. Each offers different strengths (e.g. aesthetics, strength & durability, size/ practicality and style).

Key Vocabulary

Pattern/template



a shape drawn to exact shape and size, used to assist in cutting out.

seam allowance

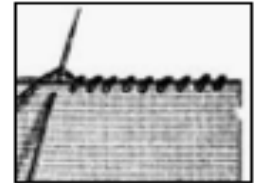
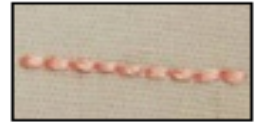


Extra fabric allowed for joining together

tacking



Large running stitches to hold pieces of fabric together temporarily.



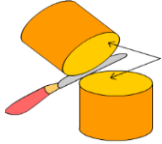




Year 6

Year 6: D&T - Volcano

Prior Learning

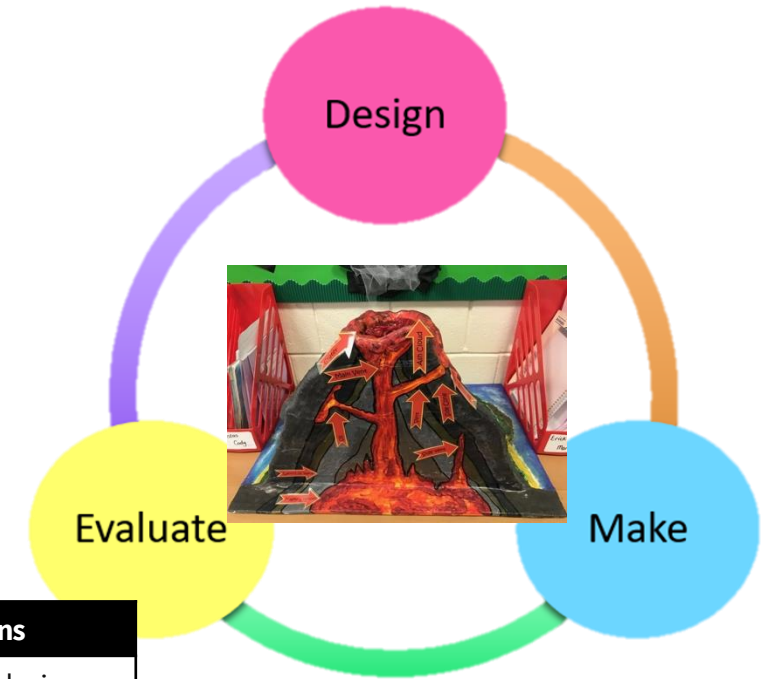
- I have used research to help form my own ideas.
- I have explored sustainability in products.
- I have adapted a recipe by adding or substituting ingredients.

Key Vocabulary

Cross sectional drawing		A cross section is a view into the inside of something made by cutting through it. Cross sections make it easy to draw details of the inside of solid objects
Step-by-step guide		Lays out each step to follow when making a product.
Finishing techniques		Adding aesthetic qualities; sanding, painting.
Design specification		What your product must be able to achieve, or what it needs to include.
Adhesive		Any substance that is capable of holding materials together in a functional manner.

Key Questions

- Why is it so important to plan a design before building one?
- Why is a cross-sectional drawing appropriate for this design?



Key Questions

- Has my design met the design specification? How do you know?
- If it hasn't, why?

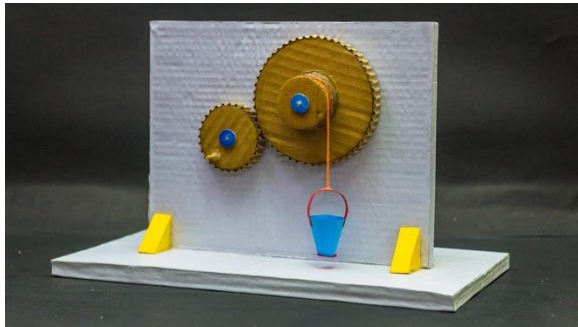
Key Questions

- Which materials will be the most appropriate to use? Why?
- How will I assemble my materials and components?

Year 6: D&T – Knex

Prior Learning

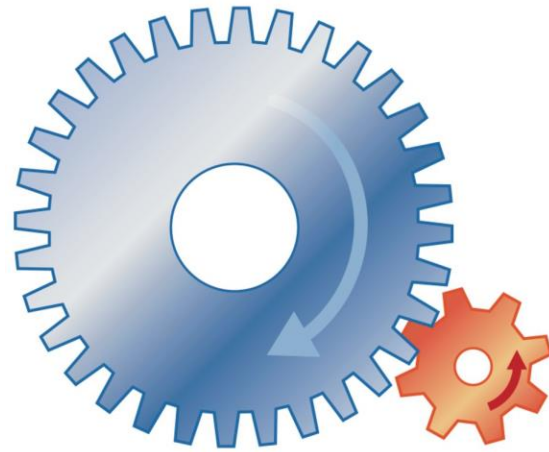
- Explored the use of different mechanisms (levers, sliders, winding, pneumatic, cams, pulleys).
- Basic understanding of electrical circuits, simple switches and components.
- Experience of cutting and joining techniques with a range of materials including card, plastic and wood.
- An understanding of how to strengthen and stiffen structures



Key Knowledge

Measuring in mm provides greater accuracy.

- 1cm = 10mm
- 10cm = 100mm
- 0.5cm = 5mm



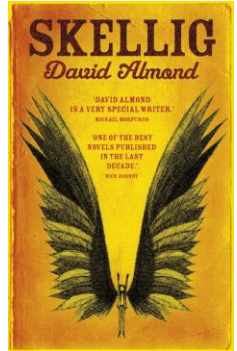
Design and Technology – Technical Knowledge

Key knowledge



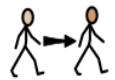
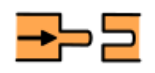


Gears are wheels with teeth that slot together. When one turns, the other turns too.

They work:

- **To increase the turning force.** Small gears turn quickly but with a smaller force, whereas large gears turn slowly with a greater force.
- **To increase the speed.** If you connect a larger gear to a smaller gear, the smaller gear turns much more quickly to keep up.
- **To change direction.** When you join two gears together, the second one will always turn in the opposite direction.



Key Vocabulary

Gearing up or down		Changing the rotational speed of a product by the use of pulleys or gears. When a small pulley or gear is used to drive a larger one the rotational speed is reduced and the product has been geared down. https://www.youtube.com/watch?v=3LssCrLKeXU&ab_channel=ehow
Driver		The gear or pulley that provides the input movement to the system
Follower		The gear or pulley that provides the output movement to the system
Mesh		The point where two gears join together and transfer movement
Pulley		A wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights.
Accuracy		Accuracy is the degree of closeness between a measurement and its true value.

Year 6: D&T - Model Cities with Circuits

Design and Technology – Technical Knowledge

Key knowledge

An electric circuit includes a device that gives energy to the charged particles constituting the current, such as a battery or a generator; devices that use current, such as lamps, electric motors, or computers; and the connecting wires.



Key Vocabulary

<p>flowchart</p>	<p>Flowcharts are a simple set of instruction that something will follow using 'control language' which focuses on inputs and outputs. An example would be when a switch is pressed, a buzzer is activated.</p>
<p>parallel circuit</p>	<p>A parallel circuit comprises branches so that the current divides and only part of it flows through any branch</p>
<p>lamp</p>	<p>An electrical current heats the filament (a think wire that glows when hot) in a bulb so that it gives out light.</p>

