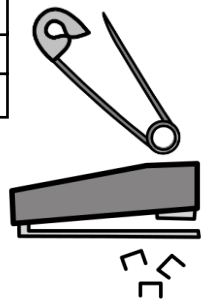
Year: One
Term: Autumn 2

Design and Technology Knowledge Organiser
Textiles: Puppets

SUPER 6

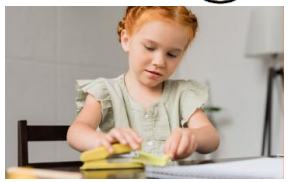
• I can trace around simple shapes to copy symbols	Red / Orange / Green
• I can measure to the nearest 10cm	Red / Orange / Green
• I can refer to a photo or drawing when talking about my work	Red / Orange / Green
• I know that drawing a design idea is useful to see how an idea will look	Red / Orange / Green
• I know that there are various methods of joining fabric by using staples, glue or pins	Red / Orange / Green
• I know that 'joining technique' means connecting two pieces of material together	Red / Orange / Green

You will use key techniques to make your puppet including:

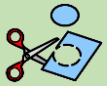


pinning
cutting

stapling
gluing



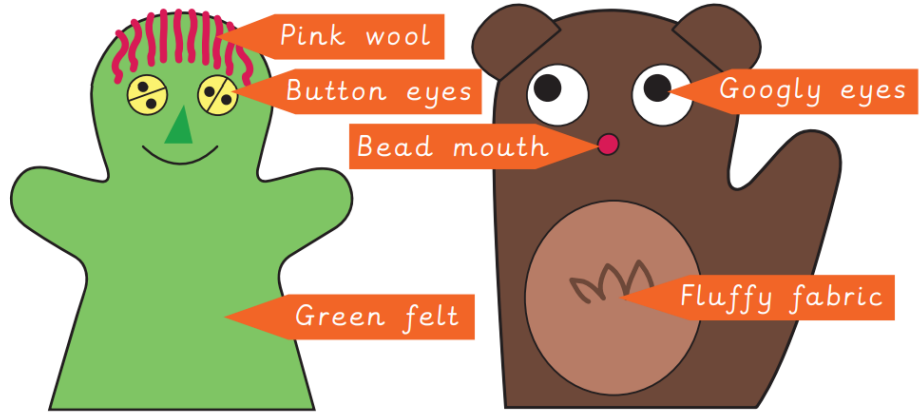
I can use common words and phrases relating to design and technology

stencil		A shape you can draw around
template		A stencil which you can use to help you draw a shape more easily on to different materials
decorate		Add details to a design to improve its appearance
design		To make, draw or write plans for something

Other words or phrases I may use…

…for talking		product, design, technology, first, second, third, etc., then, when, last, next, before, after, drawing, painting, trace, share, effect, improve, ingredients, material, savoury, sweet
…for describing location		near, far, up, down, further, higher, underneath, centre, anticlockwise, position, direction, above, below, roughly, close to, older, newer

What colour fabric will you choose for your puppet?
What colour hair will your puppet have?
What kind of eyes, nose and ears will your puppet have?



Did you know? Puppets were first invented 3000 years ago in Ancient Egypt. Clay and wooden puppets have been found in tombs!

Year: One
Term: Spring 2

Design and Technology Knowledge Organiser
Food and Cooking: Smoothies

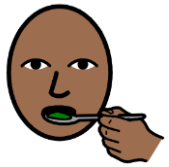
SUPER 6

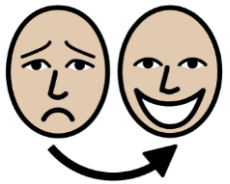
• I can make comments about what I am going to design and cook	Red / Orange / Green
• I can give a brief overview of my plans for design or cooking, using some DT vocabulary	Red / Orange / Green
• I can use tallies and simple tables	Red / Orange / Green
• I can use knives with an 11-12cm non-serrated blade	Red / Orange / Green
• I understand that some food typically known as vegetables are actually fruits	Red / Orange / Green
• I can use a peeler	Red / Orange / Green

Key skills you will use are:


cutting


juicing


tasting


evaluating

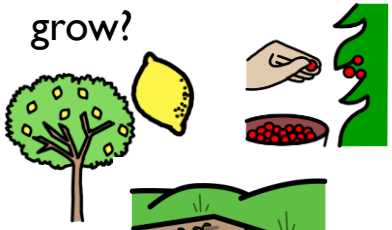
I can use common words and phrases relating to design and technology

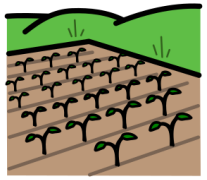
ingredients		The food needed to make a recipe
fruit		The part of a plant that has seeds in it
vegetable		A part of a plant you can eat
root		Part of a plant that takes water and other things from the soil

Other words or phrases I may use…

…for talking		product, design, technology, first, second, third, etc., then, when, last, next, before, after, drawing, painting, trace, share, effect, improve, ingredients, material, savoury, sweet
…for describing location		near, far, up, down, further, higher, underneath, centre, anticlockwise, position, direction, above, below, roughly, close to, older, newer

Do you know how fruits and vegetables grow?





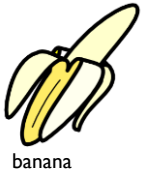
Which of these foods are fruits?
Which of these foods are vegetables?
Which ones do you like to eat?


strawberry

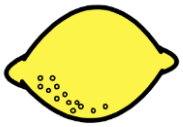

potato


grapes


spinach


banana

Did you know?
Eating fruits and vegetables is a key part of a healthy balanced diet.


lemon


avocado


pineapple


carrot


tomato


cucumber


pepper


orange

Year: One
Term: Summer 2

Design and Technology Knowledge Organiser
Structures: Constructing Windmills

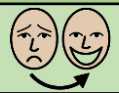
SUPER 6

- I can come up with ideas for a product and say why I like it
- With support, I can discuss design criteria during the construction process
- I can create constructions with materials that are supplied for me
- I can create a simple evaluation
- I can follow simple advice from adults to improve my work
- I understand that cylinders are a strong type of structure

Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green

How will the sails of your windmill move?

What cylinders have you seen before?

I can use common words and phrases relating to design and technology		
design criteria		A set of rules to help you with your ideas and test the success of them
evaluation		A when you look at the good and bad points about something, and then think about how you could improve it
structure		Something that has been made and put together e.g. a bridge, building, or chair
test		To find out if something works as it should

Other words or phrases I may use…		
…for talking		product, design, technology, first, second, third, etc., then, when, last, next, before, after, drawing, painting, trace, share, effect, improve, ingredients, material, savoury, sweet
…for describing location		near, far, up, down, further, higher, underneath, centre, anticlockwise, position, direction, above, below, roughly, close to, older, newer

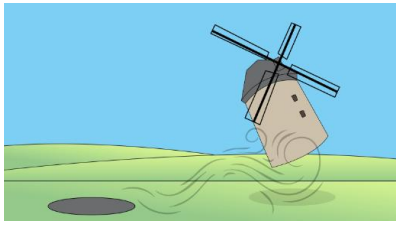
The three main parts of the windmill are:

- turbine;
- axle;
- structure.

Did you know? There are many different types of windmills in Britain. Do you know what they are used for?

This windmill is in Stock – a village near Basildon

Use your evaluating skills – what is wrong with these windmills?



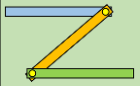
Year: Two
Term: Autumn 2

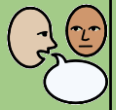
Design and Technology Knowledge Organiser
Mechanisms: Making a Moving Monster

SUPER 6

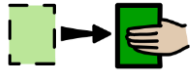
- I can make comments about the function and purpose of my product and its personal appeal — Red / Orange / Green
- I can select from the materials that are given to me — Red / Orange / Green
- I can measure to the nearest cm and g — Red / Orange / Green
- I can follow advice from adults and peers — Red / Orange / Green
- I know that a lever is something that turns on a pivot — Red / Orange / Green
- I know that an output is the movement that happens as a result of the input — Red / Orange / Green

Did you know? There are four types of motion.

I can use wide range of everyday terms in design and technology		
mechanical		Something that can move because several pieces work together like a machine
linkage		Lengths of material (like metal or card) that are joined together by pivots, so that the links can move as part of a mechanism
pivot		The central point, pin or shaft on which a mechanism turns or swings
survey		To as a group of people questions about something and use their answers to make improvements

Other words or phrases I may use…		
…for talking		process, construction, model, later, earlier, since, period, paste, textile, collage, relief, object, style, fashion, at the same time as, monitor sew, knit, contrast, depth, layer, scale, critique, compare, levers, sliders, wheels, axles, seasoning
…for describing location		left/right (from own perspective), symmetrical, reflect, diagonal, range

Linear motion
Movement in a straight line in one direction

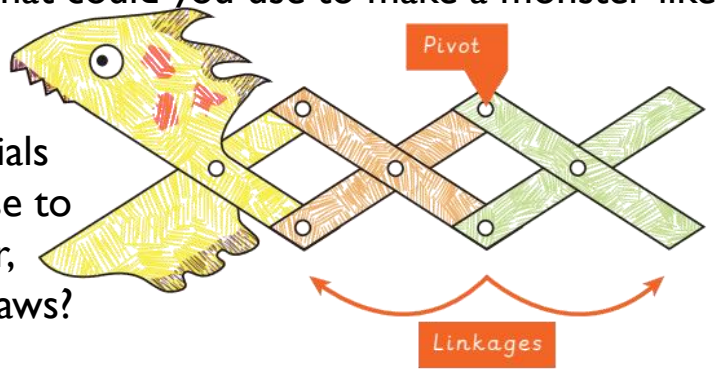


Reciprocating motion
Movement in a straight line, back and forth, in any direction

Rotary motion
Movement in a circular motion

Oscillating motion
Movement in a curve, back and forth

What components can you see in this mechanism?
What could you use to make a monster like this?



Can you find the pivot on this seesaw?

What materials could you use to represent fur, scales and claws?

Year: Two
Term: Spring 2

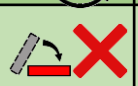
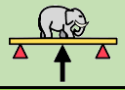
Design and Technology Knowledge Organiser
Structures: Baby Bear's Chair

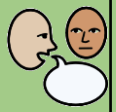
SUPER 6

- I can create a simple diagram
- I can start to share my ideas while I am building my project
- I can listen courteously to views that differ from my own
- I understand that the shape of materials can be changed to improve the strength and stiffness of structures
- I know that shapes and structures with wide, flat bases of legs are the most stable
- I know that materials can be manipulated to improve strength and stiffness

Red / Orange / Green	Red / Orange / Green	Red / Orange / Green	Red / Orange / Green	Red / Orange / Green	Red / Orange / Green

Structures often have a job, or function, such as a chair.

I can use wide range of everyday terms in design and technology		
function (verb)		How something works
stable		Something that does not easily topple over
stiff		A material or object that does not bend easily
strong		Something that is not easily broken

Other words or phrases I may use…		
…for talking		process, construction, model, later, earlier, since, period, paste, textile, collage, relief, object, style, fashion, at the same time as, monitor sew, knit, contrast, depth, layer, scale, critique, compare, levers, sliders, wheels, axles, seasoning
…for describing location		left/right (from own perspective), symmetrical, reflect, diagonal, range

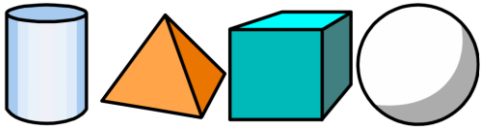
Which of these pictures show man-man things?
Which of them show natural things?
How can you tell the difference?




Which chair is the most stable for Baby Bear?
How do you know?

Are these chairs stable? What materials have been used?

What shapes would be good to use in a chair?



Which object is the most stable? Why?

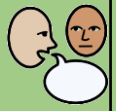

Year: Two
Term: Summer 2

Design and Technology Knowledge Organiser
Mechanisms: Fairground Wheels

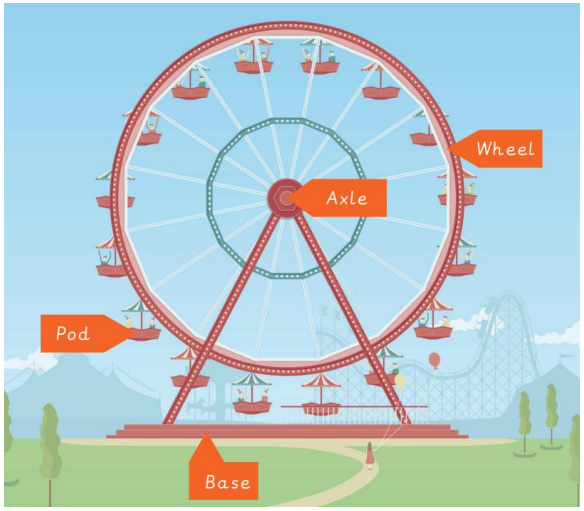
SUPER 6

• I can use scales in twos, fives and tens	Red / Orange / Green
• I can relate products to my design criteria	Red / Orange / Green
• I can use ICT to create a simple info-sheet about my work	Red / Orange / Green
• I know that mechanisms are a collection of moving parts that work together as a machine to produce movement	Red / Orange / Green
• I know the features of a Ferris wheel include the wheel, frame, pods, base, axle, and an axle holder	Red / Orange / Green
• I know that it is important to test my design as I go along so that I can solve any problems that may occur	Red / Orange / Green

I can use wide range of everyday terms in design and technology		
mechanism		The parts of an object that move together as part of the machine
Ferris wheel		A ride at a fairground that carries passengers around a large, vertical wheel
axle		A long, straight piece of material which connects to a rotating component e.g. the wheels of a car
component		A part of something that is joined with other parts to make a larger object

Other words or phrases I may use…		
…for talking		process, construction, model, later, earlier, since, period, paste, textile, collage, relief, object, style, fashion, at the same time as, monitor sew, knit, contrast, depth, layer, scale, critique, compare, levers, sliders, wheels, axles, seasoning
…for describing location		left/right (from own perspective), symmetrical, reflect, diagonal, range

Can you describe how a Ferris wheel works?



What are the key components of a Ferris wheel?

Your Ferris wheel needs to be stable and strong. What materials could you use?


London Eye

Bricks are made from clay.
They are stiff and strong.

Wood comes from trees.
It is strong and can be flexible.

Metal comes from ore that is mined underground.
It is strong and hard.

Did you know?
The first Ferris wheel to be built was in Chicago, USA in 1893. It was over 80 metres tall! What components can you see in these pictures?

Year: Three
Term: Autumn 1

Design and Technology Knowledge Organiser
Food and Cooking: Eating Seasonally

SUPER 6

- I can covert between units
- I can make choices about following advice
- I can use a knife with a 'bridge' hold to cut an onion (or similar, with supervision)
- I can cut with precision (e.g. peppers with even size)
- I can cook food in an electric stockpot/slow cooker with supervision
- I can use a grater (for foods like cheese or carrots)

Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green
Red / Orange / Green

Key skills you will use are:


cutting

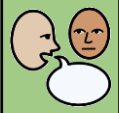

grating


peeling


spreading


tasting


evaluating

I can use some specialist vocabulary in my discussions		
complementary		Things that go well together, like colours or flowers
texture (or mouthfeel)		The way a food feels in your mouth (not taste)
peel (verb)		Remove the skin of a fruit or vegetable
seasonal		Food that grows or is harvested at a certain time of year
temperate		A climate with four seasons and no extremes of temperature, like the UK
Other words or phrases I may use…		
…for talking		chronological, approximate, accurate, technique, structure, mechanical, parallel, perpendicular, perspective, quality, fabric, weave, dye, version, purpose, opinion, organise, construct, mock-up, prototype, clarify, raising agents
…for describing location		left/right (secure usage from any perspective, e.g. discussing a partner's work across the table)

Which foods are harvested in the UK in the summer?


asparagus


beetroot


cucumber

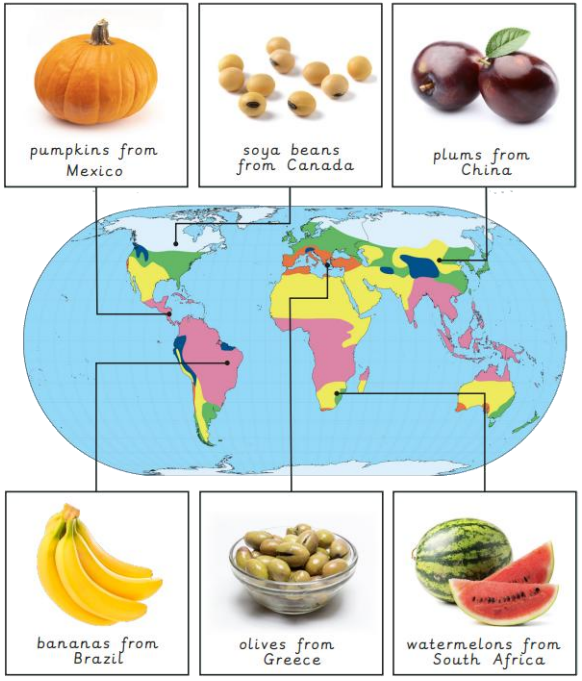

peas


lettuce


pepper


raspberries


strawberry



Did you know?
Fruits vegetables are full of vitamins, minerals and fibre. The different colours give a clue as to what they contain.

Red – vitamin A and vitamin C

Orange and yellow – vitamin A, vitamin C and fibre

Green – vitamin E, iron, B vitamins and calcium

Blue and purple – vitamin C and fibre

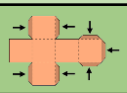
Year: Three
Term: Spring 1

Design and Technology Knowledge Organiser
Structures: Constructing a Castle

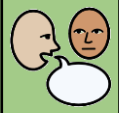
SUPER 6

• I can refer to my research when talking about my project	Red / Orange / Green
• I can draw sketches at different points of the design process	Red / Orange / Green
• I can politely discuss my peer's work	Red / Orange / Green
• I can measure to the nearest 10ml and 45° for angles	Red / Orange / Green
• I know that a 'free-standing' structure is one which can stand on its own	Red / Orange / Green
• I understand the importance of strength and stiffness in structures	Red / Orange / Green

I can use some specialist vocabulary in my discussions

façade		The front of a structure
feature		A specific part of something
scoring		Scratching a line with a sharp object into card to make the card easier to bend
net		A flat 2D shape that can become a 3D shape when assembled
tab		The small sticking out parts on a net that are bent and glued down to hold the shape together

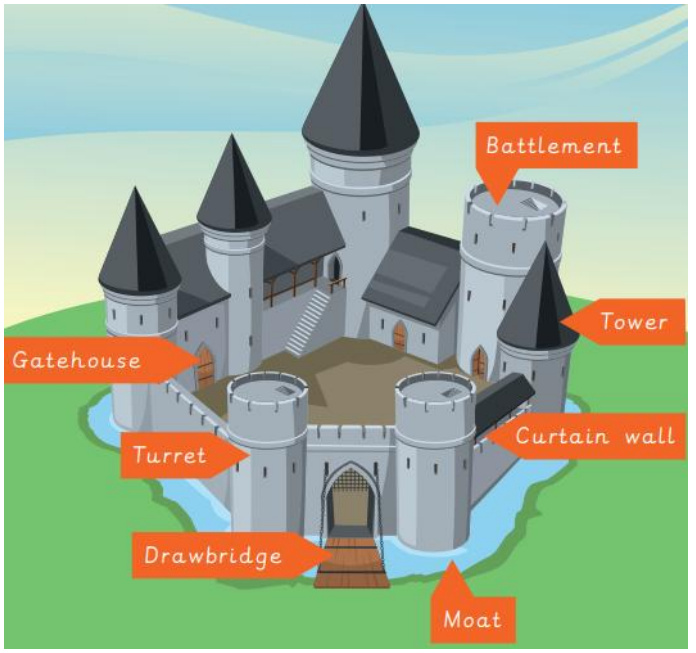
Other words or phrases I may use…

…for talking		chronological, approximate, accurate, technique, structure, mechanical, parallel, perpendicular, perspective, quality, fabric, weave, dye, version, purpose, opinion, organise, construct, mock-up, prototype, clarify, raising agents
…for describing location		left/right (secure usage from any perspective, e.g. discussing a partner's work across the table)

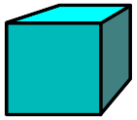
Did you know? Windsor Castle is the largest castle in England.

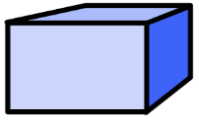
Do you know the features of a castle?

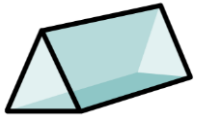
Could you make a model castle out of paper?

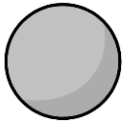


What 3D shapes might you use to make a model of a castle?

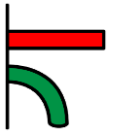

cube


cuboid


triangular prism

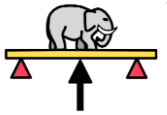

sphere


pyramid




cone


cylinder



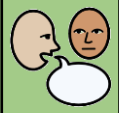
Can you use your learning from previous years to help you make your structure stiff and strong?

Year: Three
Term: Summer 1

Design and Technology Knowledge Organiser
Textiles: Making Cushions

SUPER 6

• I can show a willingness to change and/or restart my designs	Red / Orange / Green
• I can link my own and others' designs and products to their functions and purpose	Red / Orange / Green
• I can make and discuss annotated sketches and diagrams	Red / Orange / Green
• I know when two pieces of fabric are joined together it is called a seam	Red / Orange / Green
• I understand that some products are turned inside out after sewing so the stitching is hidden	Red / Orange / Green
• I know that appliqué is a way of mending or decorating a textile my applying smaller pieces of fabric to larger pieces	Red / Orange / Green

I can use some specialist vocabulary in my discussions		
appliqué		A type of textiles work where small pieces of cloth are sewn or stuck in a pattern on a larger piece
running stitch		A simple style of sewing in a straight line with no overlapping
seam		Where two edges of cloth are joined or sewn together
detail		The small features of an object or product
target audience		A person, or group of people, that a product is aimed at
Other words or phrases I may use…		
…for talking		chronological, approximate, accurate, technique, structure, mechanical, parallel, perpendicular, perspective, quality, fabric, weave, dye, version, purpose, opinion, organise, construct, mock-up, prototype, clarify, raising agents
…for describing location		left/right (secure usage from any perspective, e.g. discussing a partner's work across the table)

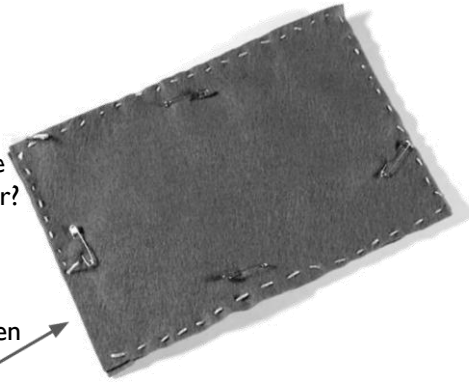
Look at how appliqué has been used to add detail to this cushion.

What will you do for your design?

Types of stitching you will use

cross stitch

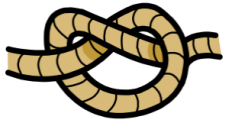
running stitch



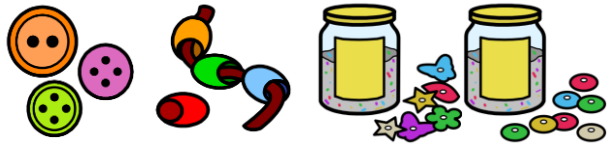
What are the safety pins for?

Why has this gap between the fabric been left?

Remember!
Tie a knot in your thread so your stitches stay secure and do not come undone!



How can you decorate your cushion?



Year: Four
Term: Autumn 1

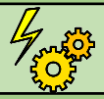
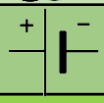
Design and Technology Knowledge Organiser
Electrical Systems: Torches

SUPER 6

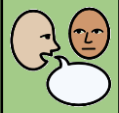
- I can explain my plans for design in some detail and, in writing, make reference to techniques or materials
- I can draw simple diagrams without much guidance
- I can request materials that have not been supplied
- I know the features of a torch: case, contacts, batteries, switch, reflector, lamp, and lens
- I know that a switch can be used to complete and break an electrical circuit
- I know that an electrical circuit must be complete for electricity to flow

Red / Orange / Green	
Red / Orange / Green	
Red / Orange / Green	
Red / Orange / Green	
Red / Orange / Green	
Red / Orange / Green	

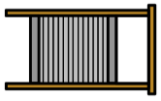
I can use specialist vocabulary, often appropriately

electrical item		Objects that need electricity to work e.g. toasters, hairdryers
electronic items		Objects that have an element of computer processing in them e.g. mobile phones, laptops
design criteria		A set of rules that designers use to help them focus their ideas and test the success of their products
copper		A reddish-coloured metal that is good at letting electricity flow through it; it is often used to make wires and pipes
cell		A single unit that provides electrical energy to power a circuit; batteries are made up of multiple cells

Other words or phrases I may use…

…for talking		uncertain, former, latter, cause, consequence, phase, trend, continuity, medium, intricate, audience, impact, program, develop, pattern, piece, structure, unique, characteristic, convention, aesthetic, circuit
…for describing location		make usage of mathematical language in describing shape and location (e.g. 3D shape vocabulary, including angles, convex, etc.), increase, decrease

Did you know?
Once upon a time, there were no electrical items to use! They had not been invented yet. How would life be different for you without electrical items?

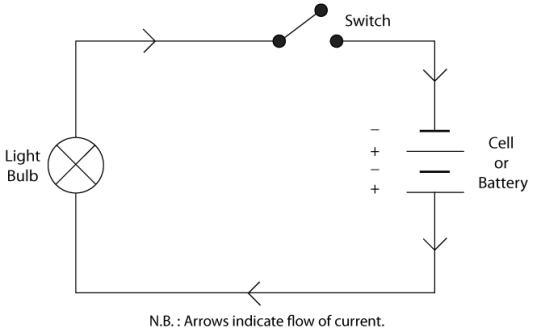

washboard


washing machine

Many products use batteries to provide electrical power.

What did people use before electric street lights?

Think about when you have studied electricity in science.
What materials are good conductors or insulators?
How will this knowledge help you make a torch?



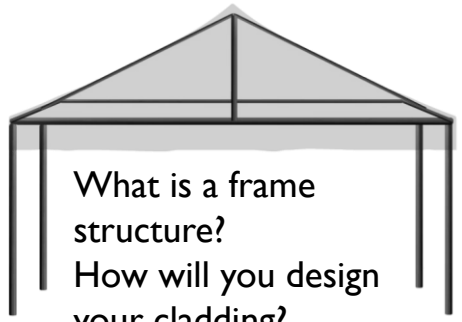
What is this diagram showing?
Why has it been drawn this way?
Will this circuit work?

Year: Four
Term: Spring 1

Design and Technology Knowledge Organiser
Structures: Pavilions

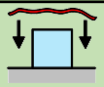
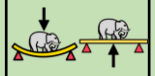
SUPER 6

• I can start suggesting improvements to others' designs	Red / Orange / Green
• I can use research to justify the appeal of my product and the innovativeness of my design	Red / Orange / Green
• I can draw a plan or sketch from a description	Red / Orange / Green
• I can create clear projections of common 3D shapes	Red / Orange / Green
• I can show a desire to alter and/or restart my designs	Red / Orange / Green
• I understand what a frame structure is	Red / Orange / Green

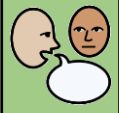


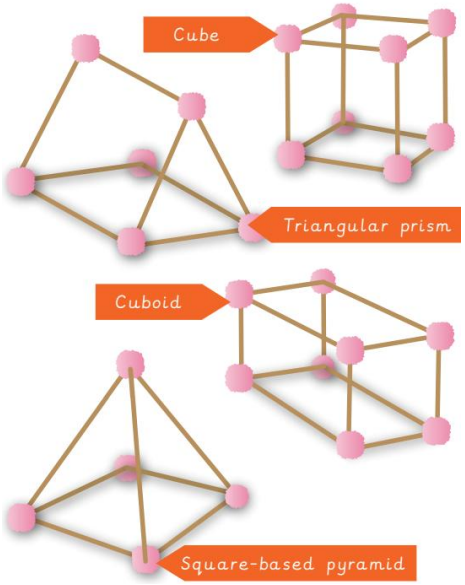
What is a frame structure?
How will you design your cladding?
How can you make different textures for your cladding?

I can use specialist vocabulary, often appropriately

aesthetic		How an object or product looks
cladding		A material put on top of another to protect it or improve appearance
frame structure		A way of building something so that the inside support are built first, and the outside covering is added later as cladding
reinforce		To make a structure or component stronger, sometimes by adding another material to it
function (noun)		The purpose of an object or product

Other words or phrases I may use…

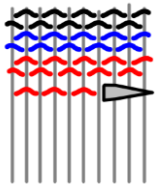
…for talking		uncertain, former, latter, cause, consequence, phase, trend, continuity, medium, intricate, audience, impact, program, develop, pattern, piece, structure, unique, characteristic, convention, aesthetic, circuit
…for describing location		make usage of mathematical language in describing shape and location (e.g. 3D shape vocabulary, including angles, convex, etc.), increase, decrease



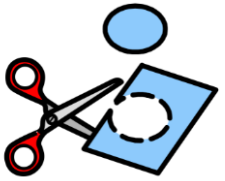
You can use different shapes to make your frame structure.

Can you make any other 3D shapes for your structure?

Did you know?
You can use different techniques to create different textures for your cladding.


weave


concertina

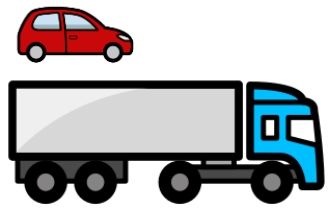

cut outs

Year: Four
Term: Summer 2

Design and Technology Knowledge Organiser
Mechanical Systems: Making a Slingshot Car

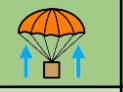
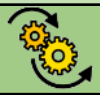
SUPER 6

• I can verbalise others' opinions politely and consider following their advice	Red / Orange / Green
• I can make and discuss cross-sectional and exploded diagrams	Red / Orange / Green
• I can reasonable estimations of length and distance, and start to estimate mass, capacity and angles	Red / Orange / Green
• I understand that kinetic energy that something has by being in motion	Red / Orange / Green
• I know that air resistance is the level of drag on an object as it is forced through the air	Red / Orange / Green
• I understand that the shape of a moving object will affect how it moves due to air resistance	Red / Orange / Green

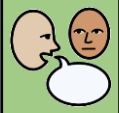


Why do lorries move more slowly than cars?

I can use specialist vocabulary, often appropriately

air resistance		The level of drag an object has as it moves through the air
chassis		The body of a car
kinetic energy		The energy that causes an object to move
graphics		Images that are designed to explain or advertise something
function		The purpose of an object (noun) or how an object works (verb)

Other words or phrases I may use…

…for talking		uncertain, former, latter, cause, consequence, phase, trend, continuity, medium, intricate, audience, impact, program, develop, pattern, piece, structure, unique, characteristic, convention, aesthetic, circuit
…for describing location		make usage of mathematical language in describing shape and location (e.g. 3D shape vocabulary, including angles, convex, etc.), increase, decrease

Which of these vehicles has the least air resistance? Why?

What do you notice about the design of this lorry?

Designers will often use create different views of a product in the planning phase. Why do you think they do this?


front view


bird's eye view
top down view


side view

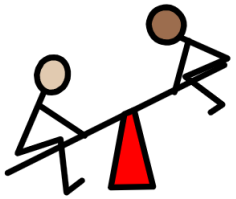
Did you know?
Some of the first toy cars were made in 1901 – that is over 100 years ago!

Year: Five
Term: Autumn 1

Design and Technology Knowledge Organiser
Mechanical Systems: Making a Pop-Up Book

SUPER 6

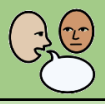
- I can make comments about how my product might be altered to appeal to other groups of people — Red / Orange / Green
- I can make an accurate design sketch from someone else's measurements and notes — Red / Orange / Green
- I understand that mechanisms can be used to change one type of motion into another — Red / Orange / Green
- I understand how to use sliders, pivots and folds to create paper-based mechanisms — Red / Orange / Green
- I know that designers often want to hide mechanisms to make a product more aesthetically pleasing — Red / Orange / Green
- I know that mechanisms control movement — Red / Orange / Green



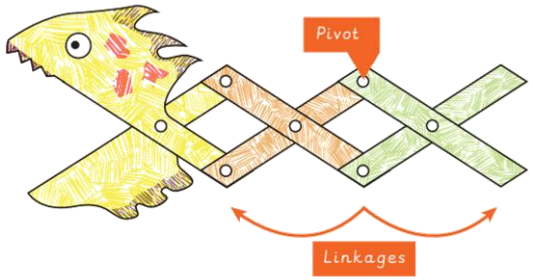
I can use specialist vocabulary appropriately

exploded diagram		A diagram which shows all the parts of a product, including all the external and internal parts
input		The motion used to start a mechanism
output		The motion that happens as a result of starting the input
prototype		A simple model that allows you to test out your idea and see how it will look and work
caption		A short piece of writing under a picture that describes or explains the picture
CAD (Computer Aided Design)		Using the computer to help you design a product, drawing or diagram

Other words or phrases I may use…

…for talking		contemporary, prior, subsequent, enduring, dominate, context, spares, exceptional, pulley, cam, lever, gear
…for describing location		shape vocabulary (including diagonal, rotation, angle language)

Did you know?
Did you know that the first children's pup-up books were invented in the 1700s – over 300 years ago! Lothar Meggendorfer was a well-known pop-up book author in the late 1800s and early 1900s.



Think of a seesaw. When one person sits on (input), the other person goes up (output).

How can your prior learning from Year 2 help you in this unit?

What types of motion can you create in your pop-up book?

The mechanism from one of Lotan Meggendorfer's books from 1906

Linear motion
Movement in a straight line in one direction

Reciprocating motion
Movement in a straight line, back and forth, in any direction

Rotary motion
Movement in a circular motion

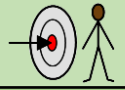
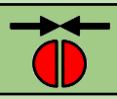
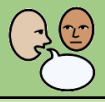
Oscillating motion
Movement in a curve, back and forth

This is a caption

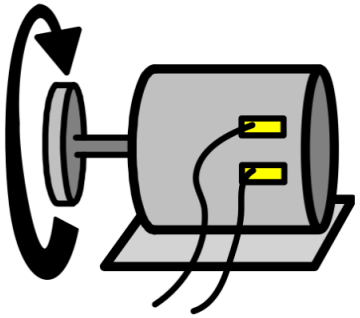
Year: Five
Term: Spring 2

Design and Technology Knowledge Organiser
Electrical Systems: Doodlers

SUPER 6		
	• I can make reasonable suggestions for how my peers might improve their work	Red / Orange / Green
	• I can measure angles to the nearest °	Red / Orange / Green
	• I can use constructive and sensitive language to suggest improvements to my peers' designs	Red / Orange / Green
	• I know that when there is a break in a series circuit, all components turn off	Red / Orange / Green
	• I know that an electric motor converts electrical energy to rotational movement, causing the axle to spin	Red / Orange / Green
	• I know that 'configuration' means how the parts of a product are arranged	Red / Orange / Green

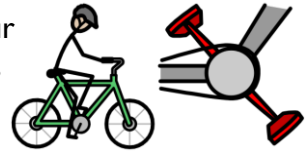
I can use specialist vocabulary appropriately		
product analysis		To look at an object and evaluate it based on certain criteria e.g. function
target user		A particular person at whom the product is aimed
configuration		How different parts are put together to form one object
circuit component		One of several parts that complete a circuit
develop		Continue to work on something to make progress or improve it
DIY (Do It Yourself)		Various activities that someone chooses to do themselves at home, rather that through a service or professional
Other words or phrases I may use…		
…for talking		contemporary, prior, subsequent, enduring, dominate, context, spares, exceptional, pulley, cam, lever, gear
…for describing location		shape vocabulary (including diagonal, rotation, angle language)

What is the name of this circuit component?
What is the purpose of this circuit component?
Can you name a product that uses this circuit component?
How do you know?

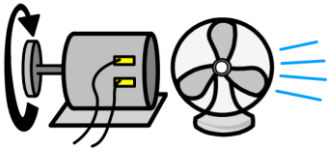


Axles form part of the wheel mechanism in wheeled products such as toy cars, wheelbarrows and bicycles.

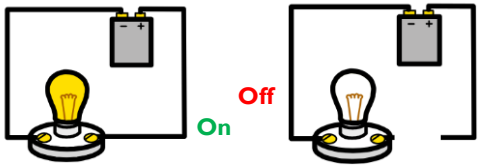
For a bicycle to function, we need to use our legs and feet to push the pedals that rotates the axle and spin the wheels.



An electric motor coverts electrical energy into rotational movement, causing the motor's axle to spin. Motors use electricity instead of human force to move the axle.
A motorised product is an object that uses a motor to function.



Did you know?
Series circuits only have one path for the electricity to flow. If there is a break in a series circuit, the current will be cut off and the components will not work. Causing a break in a series circuit can act as a switch to turn the circuit off.

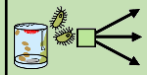
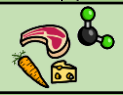
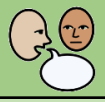


Year: Five
Term: Summer 2

Design and Technology Knowledge Organiser
Food and Cooking: Developing a Recipe

SUPER 6

- I can plan designs in detail with preliminary studies in sketchbooks, with reference to other designs and materials I have studied — Red / Orange / Green
- I can request other materials or ingredients and give reasons for my choices — Red / Orange / Green
- I can create a presentation with text and images to support me in showcasing my work — Red / Orange / Green
- I can use large knives on hard vegetables (e.g. swede) — Red / Orange / Green
- I can handle hot food with oven gloves with supervision — Red / Orange / Green
- I can use the 'claw' grip to cut e.g. celery, cheese — Red / Orange / Green

I can use specialist vocabulary appropriately		
adaptation		The process of changing something
cross-contamination		When something harmful (such as bacteria) spreads from one food to another
hygiene		Keeping things clean to prevent illnesses
nutrient		Substances that help living things stay healthy
nutritional value		The nutrients a food or recipe provides
process		A series of actions
Other words or phrases I may use…		
…for talking		contemporary, prior, subsequent, enduring, dominate, context, spares, exceptional, pulley, cam, lever, gear
…for describing location		shape vocabulary (including diagonal, rotation, angle language)

Did you know?
Cross-contamination is when harmful bacteria from one food get onto another food. To prevent it, professional kitchens will often use different coloured chopping boards for different types of food.

Green - salad and fruit
Brown - root vegetables
White - bakery and dairy
Red - raw meat
Blue - raw fish
Yellow - cooked meat

What should a nutritious meal have?
Can you explain how to make a meal more nutritious?

Spaghetti bolognaise is a popular dish that can be adapted in different ways to suit dietary requirements and personal tastes. You can develop the recipe by adding or removing ingredients.

Nutritional information shows us the nutritional value of foods. We can use these to help us make healthier choices by looking at the different amounts of fibre, sugar, salt, etc.

Key skills you will use are:

 cutting

 grating

 juicing

 snipping

 mixing

 measuring

 tasting

 evaluating

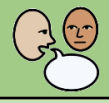
This is a caption

Year: Six
Term: Autumn 1

Design and Technology Knowledge Organiser
Structures: Playgrounds

SUPER 6

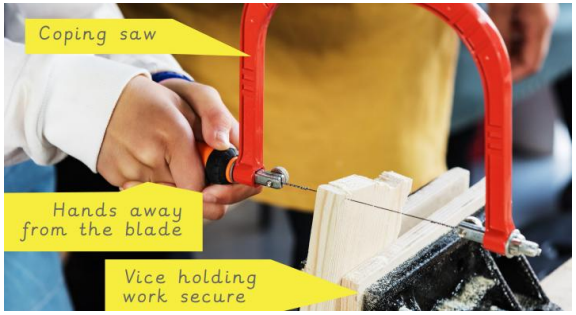
• I can constructively critique my peers' work and help with improvements if appropriate	Red / Orange / Green
• I can help improve peers' designs where that offer is welcomed	Red / Orange / Green
• I can use a range of supporting material to showcase my work, and answer questions about my project	Red / Orange / Green
• I know that structures can be strengthened by manipulating materials and shapes	Red / Orange / Green
• I understand that in the real world designers can impact users in positive and negative ways	Red / Orange / Green
• I know that a prototype is a cheap model to test an idea	Red / Orange / Green

I can start to apply vocabulary in sophisticated ways		
apparatus		Equipment designed for recreation and play, such as seesaws and swings
plan view		A two-dimensional diagram used to describe a place or object from above with annotations and other measurements
modify		Change something to improve or fix it
dowel		Wood in the shape of a cylinder; they come in different sizes and thicknesses
bench hook		A tool which hooks onto the edge of a workbench to keep wood still when you cut it
natural materials		Materials that come from nature e.g. wood from trees
Other words or phrases I may use…		
…for talking		simultaneous, attribute, controversy, authentic, maquette
…for describing location		concentric, radial, intersecting

Why is it important to consider the landscape design for outdoor spaces?
How would you improve it for this playground?

There are many different types of equipment in a playground: swings, seesaws, climbing frames, zip wires, and many more. Which ones are your favourite?

junior hacksaw



Did you know?
The first children's playground was created in 1859, in a park in Manchester.

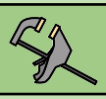
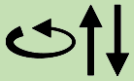
REMEMBER! Fix or hold your wood securely using a bench hook or vice when sawing. Keep your fingers out the way of the blade!

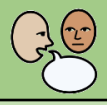
Year: Six
Term: Spring 1

Design and Technology Knowledge Organiser
Mechanisms: Automated Toys

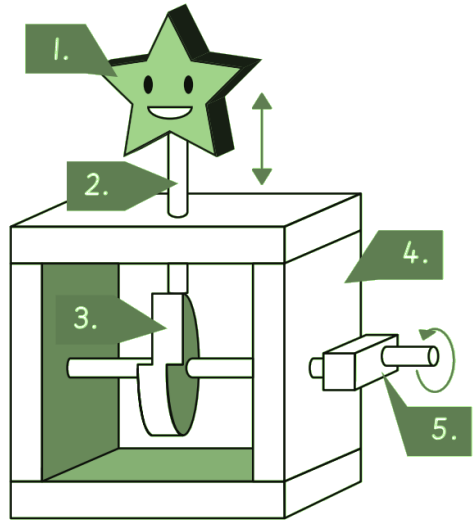
SUPER 6

- I can make sophisticated comments about the limitations of the function and purpose of my product, with reference to different audiences — Red / Orange / Green
- I can constructively critique my peers' work and help with improvements if appropriate — Red / Orange / Green
- I can analyse my own and others' responses to my designs, making improvements if appropriate — Red / Orange / Green
- I know that a design brief is a description of what I am going to design and make — Red / Orange / Green
- I understand that the mechanism in an automata toy uses a system of cams, axles and followers — Red / Orange / Green
- I understand that different shaped cams produce different outputs — Red / Orange / Green

I can start to apply vocabulary in sophisticated ways		
assembly diagram		An exploded view diagram of an object that shows you how to construct it
automata		Automata toys are sometimes known as mechanical toys; hand-powered mechanisms make movement
clamp		A tool for holding objects together, sometimes when you are waiting for glue to dry
cam		A rotating or sliding piece in a mechanism; it changes rotary to linear motion
finish		To complete your product with a high-quality appearance
follower		The post which traces the shape of the cam, in a linear or reciprocating motion

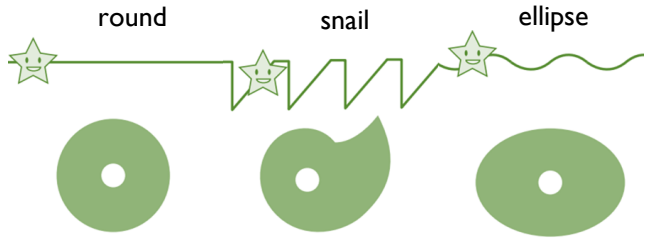
Other words or phrases I may use…		
…for talking		simultaneous, attribute, controversy, authentic, maquette
…for describing location		concentric, radial, intersecting

Automata toy components



1. Character – this this attached to the follower and moves
2. Follower – this shaft is attached to the character and is pushed by the cam
3. Cam – this is attached to the axle and rotates when the axle does
4. Frame – this holds everything in place
5. Axle and handle – when the handle is turned, the axle rotates

Changing the shape of the cam will make the character have different movements.

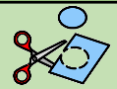
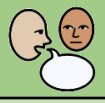


Year: Six
Term: Summer 2

Design and Technology Knowledge Organiser
Textiles: Drawstring Bags

SUPER 6

• I can plan in detail with preliminary studies in sketchbooks, linking to what I have studied before and explaining my choices	Red / Orange / Green
• I can make reasonable estimations of length, distance, mass, capacity, angle, area and temperature	Red / Orange / Green
• I understand that it is important to design clothing with the client / target customer in mind	Red / Orange / Green
• I know that using a template (or clothing pattern) helps to accurately mark out a design on fabric	Red / Orange / Green
• I understand the importance of consistently-sized stitches	Red / Orange / Green
• I know that a blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric	Red / Orange / Green

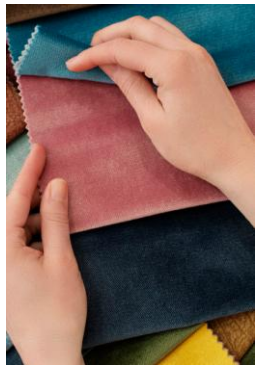
I can start to apply vocabulary in sophisticated ways		
adapt		Change or alter something to fit a given purpose, or to improve it
annotate		Add notes which explain a plan or design
fastening		A closing and opening detail on clothing, such as buttons, zips and press studs
drawstring		A string in the seam of the material of a garment or a bag, which can be pulled to tighten or close it.
properties		The way in which we describe materials for their appearances, strengths and weaknesses
template		A stencil make of metal, plastic or card used for making many copies of a shape or to help cut material accurately
Other words or phrases I may use…		
…for talking		simultaneous, attribute, controversy, authentic, maquette
…for describing location		concentric, radial, intersecting

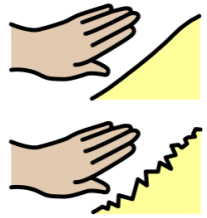
Did you know?
A monogram is a motif of two or more interwoven letters, usually used to identify someone's personal possessions (like a personal logo)

How can you fasten your template to the fabric?

What should you do to make sure your template is accurate and will fit properly before marking out?

You need to measure accurately or your drawstring bag will not tighten correctly!





Think carefully about your target audience or customer.

What material or fabric will they like? Think about colour and texture, and how hardwearing the bag needs to be.

What designs can you put on your bag to make it attractive? Could you personalise your bag?