

Design Technology


Intent and Implementation

Content Spine

Knowledge Organisers

Key Concepts

Progression Maps



Design is not just what it
looks like and feels like.
Design is how it works.

Steve Jobs

Design Technology Intent and Implementation

Why do we teach Design Technology?

Design and Technology is an inspiring, rigorous and practical subject. It encourages children to be imaginative, innovative and experiment with trying different methods to make a product. Design Technology also promotes reflective thinking in children as they reflect and evaluate the successes and the things that went wrong during the planning or execution of the final product. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness.

At Shinfield Infant School, we encourage children to use their creativity and imagination, to design and make products that solve real, relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Wherever possible, we aim to link work to other subjects such as mathematics, science, computing and art.

What is our curriculum aim?

Our aims in the teaching of Design and Technology are:

- to give children the opportunity to take part in creative and practical design opportunities
- to understand the importance of design technology in the wider world and how much we rely on it in everyday life
- to develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making their products
- to enable children to talk about how things work, and to draw and make models of their ideas
- to encourage children to be analytical and critical when they are considering and analysing products
- to encourage children to select appropriate materials, tools and techniques for making a certain product
- to follow safety procedures when using equipment
- to promote and encourage enjoyment, satisfaction and purpose in designing and making things
- To help understand a balanced meal and the different food groups you need to be healthy
- Learn how to combine ingredients to make simple recipes.

Design Technology Intent and Implementation

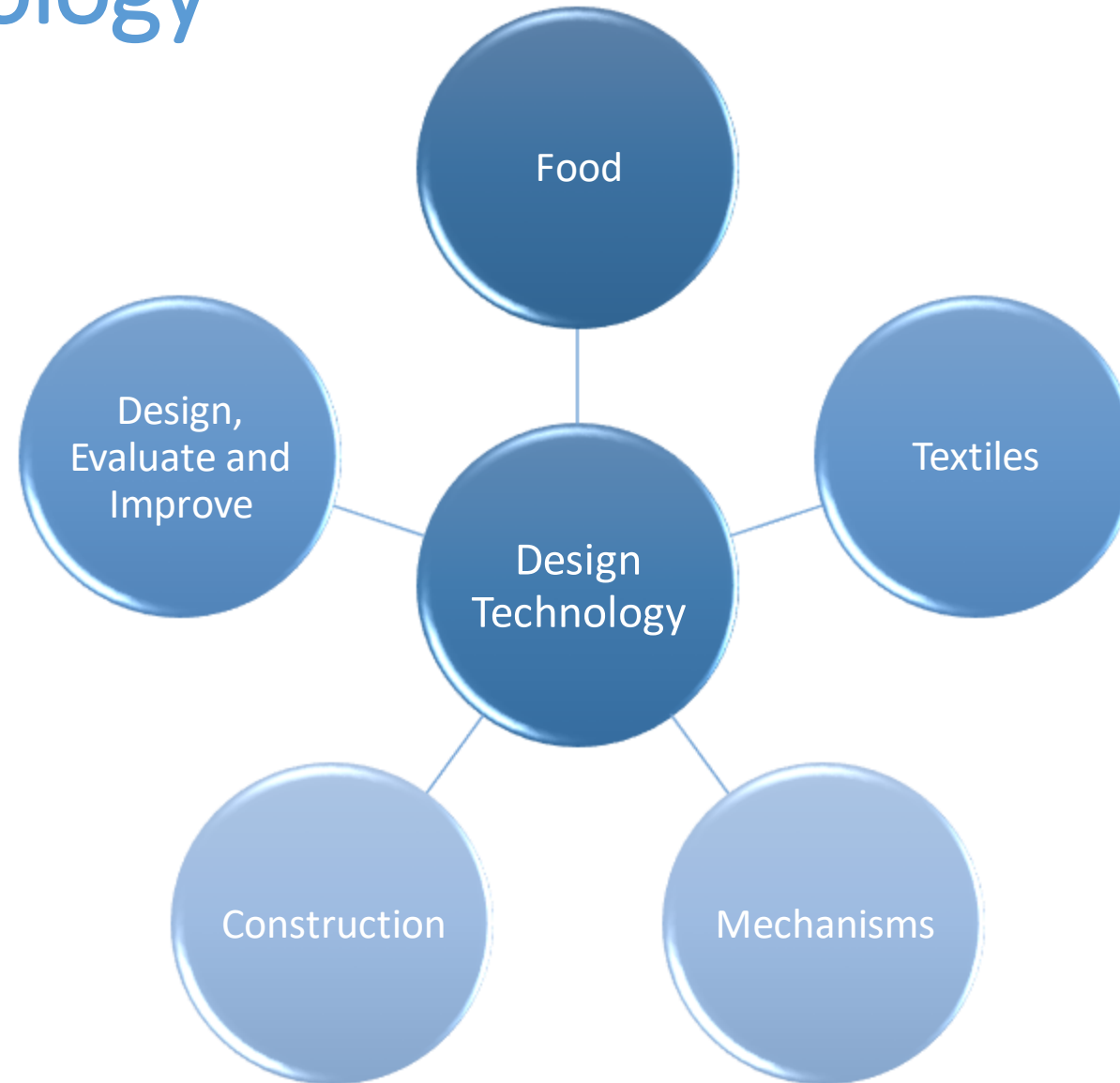
How is Design Technology taught at Shinfield?

At Shinfield Infant School, using the National Curriculum we map out long term coverage of progression of knowledge, understanding and skills. Evidence suggests that basing subjects on children's interests and topics relevant to them, engages and encourages their learning, therefore our Design and Technology planning is designed to link with the different topics in each year group. It also enables teachers to make tangible and meaningful cross curricular links to English, Maths, Science and many other subjects.

At Shinfield Infant School, we feel it is very important to ensure all children are given a broad range of opportunities to develop the skills and knowledge to design and make functional products they will come across and be important in their lives. Our Design Technology lessons encourage the children's imagination, creativity, problem solving and reflection skills.

Design Technology

Key Concepts



Design Technology Content Spine

| | Autumn Term | Spring Term | | Summer Term |
|--------|---|---|---|---|
| Year 1 | Food: Food face wraps | Mechanisms A vehicle to travel on the moon (moon buggies) | Textiles Making a finger puppet and puppet theatre | Construction Making boats that float/sink |
| Year 2 | Construction A model of a lighthouse. | Food: Pizza making | Textiles: Create a cabin for the Titanic and furnish with fabric. Sew a felt boat onto binca fabric. | Mechanisms Moving minibeasts |

Early Learning Goal – Expressive arts and design

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

Design Technology Progression Map – Food

Year 1

- describe the properties of food ingredients: taste, smell, texture and consistency
- gather ingredients accurately
- prepare food safely and hygienically
- know how to use different equipment correctly and safely

Year 2

- weigh or measure ingredients accurately
- prepare food safely and hygienically and describe what this means
- learn how to store products for long-life and hygiene
- understand that food comes from animals and plants
- use the basic principles of a varied and healthy diet to prepare dishes

Design Technology Progression Map – Textiles

Year 1

- use scissors to cut
- understand how to join fabrics using different techniques e.g. running stitch, glue, running stitch, stapling.
- explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.

Year 2

- use scissors precisely when cutting out.
- understand how to join fabrics using different techniques e.g. running stitch, glue, running stitch, stapling.
- .know and use technical vocabulary relevant to the project.
- make a textile product that has a good finish.
- know that textiles have different properties e.g. insulation, texture and waterproof.

Design Technology Progression Map – Construction

Early Learning Goal – Expressive arts and design

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

Year 1

- make a structure
- name the materials used to make the structure
- With support measure and mark out the materials needed for a structure
- Use suitable joining materials e.g glue, staples etc
- Apply suitable finishing techniques
- Evaluate structure – how could it be improved?

Year 2

- make a structure
- describe the materials used to make a structure
- measure and mark out the materials needed for a structure
- finish off work so it looks neat and tidy – adding suitable decoration.
- explore how to make materials for my structure stronger (e.g. folding, joining or rolling)

Design Technology Progression Map – Design, Evaluate and Improve

Year 1

- think of ideas and with help, put them into practice
- know the features of familiar products
- use pictures and words to describe product design plans
- talk about own and others work
- describe how a product works

Year 2

- think of ideas and plan what to do next, based on what is known about materials and components
- select the appropriate tools, techniques and materials, explaining choices
- recognise what has gone well in a piece of work
- suggest things to improve in future pieces of work

Design Technology Progression Map – Mechanisms

Early Learning Goal – Expressive arts and design

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

Year 1

- Make a product that uses movement.
- Use materials right for the job and which help a product to work well.
- Use a number of materials and join them so they are strong.
- Use art skills to add design or detail to a product..
- Look at wheels, axels and turning mechanisms.
- Use art skills to apply texture or design to a product.

Year 2

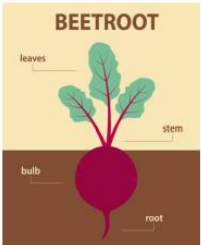
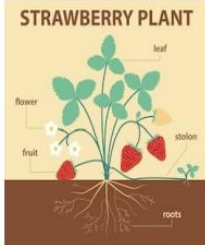
- Make a product that moves using a turning lever or a hinge (to make a movement).
- Cut materials using scissors.
- Describe the properties of the materials used.
- Use a number of materials and join them so they are strong.
- Look at hinges and simple levers and discuss how they work.
- Use art skills to apply texture or design to a product.

DT Knowledge Organiser : Year 1 - Food

| What should I already know? |
|---|
| To safely use tools and technique, handle equipment and tools effectively. To know and talk about the different factors that support overall health and wellbeing including healthy eating. |

| Health and Safety | |
|---|---|
| Using a knife safely bridge hold  | Wash your hands Keep food safe to eat.  |

| Key vocabulary | |
|----------------|--|
| chop | To cut something into pieces |
| fruit | The sweet and fleshy part of a tree or other plant that contains seeds and can be eaten as food. Eg: strawberry, apple, orange, kiwi |
| healthy food | Food that will help your body have good nutrition |
| peel | To pull or strip off the outer covering of something |
| unhealthy | Food that we should not eat all the time to keep our bodies in good condition |
| vegetable | A plant or part of a plant used as food. Eg: carrots, broccoli, cauliflower, green beans. |

| What will I know by the end of the unit? | |
|---|---|
| Use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from. | Everyone should eat at least five portions of fruit and vegetables every day as part of a healthy diet Fruit and vegetables are plants that are grown. Fruit and vegetables need to be prepared through washing, peeling, and chopping. Fruit and vegetables have varied tastes such as sweet, bitter and sour. Fruits contain seeds and are part of your 5 a day. Vegetables often have roots, stems or leaves which are often removed before eating. |
| |   |

| What will I be able to do at the end of this unit? | |
|--|---|
| design | Use my imagination to design how I will organise my food face wrap. Share my ideas through talking and drawing |
| make | Choose and select the fruits I will use according to my design. Choose tools to peel and chop the fruit into the appropriate sizes using a safe bridge hold. |
| Evaluate | Explore and evaluate a range of fruits and vegetables, their shape, size and colour to help me choose mine. Look at the design, does the wrap look like a face? |



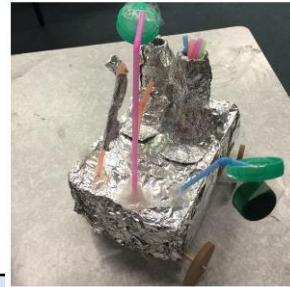
| Design Technology: Skills and Enquiry |
|--|
| Which colour fruit do I need for each part of my design? |
| What are the differences between fruit and vegetables? |

DT Knowledge Organiser : Year 1 - Mechanisms

What should I already know?

Know how to join and combine materials. Know how to make simple vehicles from construction kits such as Lego and Mobilo with moving wheels.

Name different types of transport and emergency vehicles.



What will I know by the end of the unit?

Know that on a vehicle:

- the wheels need to be fixed to an axle
- the axle needs to move freely in the chassis

Explain how a wheel and axle move on a vehicle.

Know that some materials are stronger and more rigid (stiffer) than others e.g. thick card is stronger and more rigid than paper

Use the vocabulary: wheel, axle, chassis, body to describe the parts of the vehicle correctly.

| What will I be able to do at the end of this unit? | |
|--|--|
| Design and make | Decide on simple design criteria and communicate ideas through talking, drawing and labelling. Use the correct joining materials to make my product long lasting. |
| Choose | Mark out and measure the length of handles and axle. Cut and shape parts of mechanism to ensure buggy moves forwards and backwards. |
| Know and explain | Suitable materials for the wheels, body and additional features of a vehicle |
| Know and explain | How to join materials to make a moving vehicle with a chassis, wheels and moving axles Use tools and equipment safely and correctly e.g. scissors, glue, saw, tape. |
| Evaluate | Against its design criteria . Say how a vehicle is suitable for moon travel |

| Key vocabulary | |
|-----------------|--|
| design | A plan for the construction of an object or system that has a purpose. |
| chassis | Base frame of a wheeled vehicle |
| evaluate | Judge the quality and effectiveness of a product |
| axel | a rod or spindle passing through the centre of a wheel |
| body | The outer shell of a vehicle |

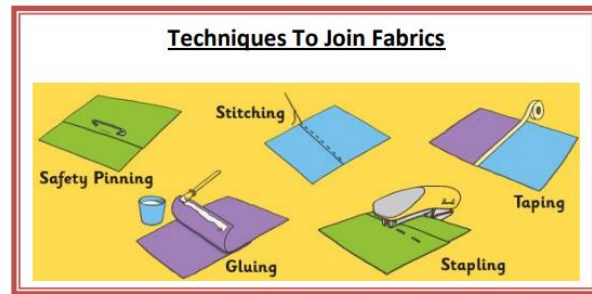
Design Technology: Skills and Enquiry

Can you add a moving part to your vehicle e.g. opening doors and windows?



DT Knowledge Organiser : Year 1 - Textiles

| What should I already know? |
|--|
| Know how to join and combine materials. Know how to make simple puppets from paper, straws and masking tape. |



| What will I know by the end of the unit? |
|--|
| That a 3-D textiles product can be assembled from two identical fabric shapes. |
| The simple working characteristics of textile materials and components. |
| Technical vocabulary relating to Textiles. |

| What will I be able to do at the end of this unit? | |
|--|---|
| Explore | different types of puppets and their parts |
| Make | Simple drawings and label parts |
| Measure | To measure, mark out, cut, shape and join fabric pieces to make the main part of a puppet |
| Evaluate | Against its design criteria . |



| Key vocabulary | |
|----------------|---|
| Puppet | a figure or model that is moved by a person. |
| Material | the matter (stuff) from which a thing is or can be made. |
| Textile | a type of cloth or woven fabric. |
| Fabric | a woven or knitted material either made from thread or yarn. |
| Template | a shape or pattern that is cut out of a hard material and used to make the same shape and pattern in other pieces of material |
| Join | link or connect two or more things together |

| Design Technology: Skills and Enquiry |
|---|
| Who have you designed your puppet for? Which decorations will be most effective for your puppet? What is the most secure join for your decorations? |

DT Knowledge Organiser : Year 1 – Construction

What should I already know?

Think of simple ideas for a product. Glue and sticky tape can be used for joining materials. Join materials to make a simple product. Wood is a strong material. Paper is a light material. Paper/card can be drawn on/ decorated more easily than plastic.



What will I be able to do at the end of this unit?

| | |
|-----------------|---|
| Explore | Toy boats . |
| Design | Use what I have found out about vehicles to help design my own product. Share my ideas through talking and drawing. |
| Make | Use the correct joining materials to make my product long lasting. Mark out and measure the length of parts. |
| Evaluate | Against its design criteria . |

Key vocabulary

| | |
|--------------------|--|
| appealing | To be attractive or interesting to who you are making something for. |
| design | Plan or drawing produced to show the look and workings of a product. |
| evaluate | To make a judgement on how a task went. |
| join/attach | Used to link or fasten parts together. |
| material | What an object is made from eg paper, wood, plastic. |

What will I know by the end of the unit?

Cardboard boxes are made from recycled materials. Recycled materials can include paper bags, toilet paper, paper plates and egg cartons.

A wooden or plastic handle will make my product sturdy and easy to use.

A product must be appealing to the person it is being made for. You can do this by decorating the product.



Health and Safety

Scissors - Hold scissors safely: blades closed, hand around the blade, always walk when carrying scissors. Use a pencil and blue tack to pierce materials safely. Always work with an adult to do this.

Glue gun - Allow time for the glue to cool for before handling the wheelbarrow. Always work with an adult when you are using the glue gun.



DT Knowledge Organiser : Year 2 - Construction

| What should I already know? |
|--|
| Know how to join and combine materials and cut and shaped card. Know how to create simple design criteria and communicate ideas through talking, drawing and labelling. Use tools and equipment—scissors, split pins, tape, glue correctly |



| What will I know by the end of the unit? |
|--|
| <ul style="list-style-type: none"> • How to make a structure • describe the materials used to make a structure • measure and mark out the materials needed for a structure • finish off work so it looks neat and tidy – adding suitable decoration. • explore how to make materials for my structure stronger (e.g. folding, joining or rolling) |

| What will I be able to do at the end of this unit? | |
|--|---|
| Design | Decide on simple design criteria and communicate ideas through talking, drawing and labelling. |
| Choose | Suitable materials for the lighthouse and additional features to decorate. |
| Know and explain | How to join materials to make a musical instrument. Use tools and equipment safely and correctly e.g. scissors, glue, saw, tape. |
| Evaluate | Against its design criteria . Say how the model is a representation of a lighthouse. |

| Key vocabulary | |
|----------------|---|
| design | A plan for the construction of an object or system that has a purpose. |
| combine | Join together |
| lighthouse | A lighthouse is a big tower with a light at the top. They were built near places where lots of ships sailed. The light warned sailors that land was near and that they needed to sail further away. |



DT Knowledge Organiser : Year 2 - Food

| What should I already know? |
|--|
| Some foods are healthy and some are unhealthy. Everyone should eat at least five portions of fruit and vegetables a day as part of a healthy diet. How to use some tools safely for example, knives to chop. |

| What will I know by the end of the unit? |
|--|
| You must always think about health, safety and hygiene when preparing or making food. It is very important to wash your hands before starting. |
| There are 5 different food groups, which can be seen on the Eatwell Plate. We should eat more foods from some groups e.g. fruits and vegetables, and less from others e.g. oils and spreads. |
| All food comes from plants or animals, and that food has to be farmed, grown in other places like home or caught. |
| The best ingredients to use to make a healthy pizza, and how these ingredients taste, smell, feel and what their texture is like. |

| Design Technology: Skills and Enquiry |
|---|
| Use a range of tools and equipment to make a simple dish. |
| How to use different techniques such as cutting, peeling, grating, slicing and spreading. |
| How to measure and weigh food items using non-standard measures e.g. spoons and cups. |
| Talk about my design and why I have chosen ingredients and equipment. |

| What will I be able to do at the end of this unit? |
|---|
| <p>Design</p> <p>Explore and evaluate a range of pizza toppings, thinking about the taste, texture and appearance of the different foods.</p> <p>Use what I have found from my investigation to design a healthy pizza.</p> <p>Communicate ideas by labelling my design and identifying what ingredients and components I will need.</p> <p>Create a list of ingredients and tools needed for the final design.</p> <p>Make</p> <p>Make a healthy pizza whilst following food hygiene rules.</p> <p>Select and use a range of tools and equipment to help fill the pizza e.g. knives to spread, tongs to pick up, scissors to chop.</p> <p>Use ingredients which were on the pizza design.</p> <p>Place all ingredients evenly on the pizza.</p> <p>Evaluate</p> <p>Say what I like about my pizza and how it compares to my original design. Does it fit the design criteria?</p> <p>Say what I could do to improve my pizza.</p> <p>Taste the pizza and comment on the flavour and texture, as well as its appearance.</p> <p>Say what I like about other people's pizzas and evaluate their product based on the original design.</p> |

| Key vocabulary | |
|----------------|--|
| chop | To cut something into pieces |
| fruit | The sweet and fleshy part of a tree or other plant that contains seeds and can be eaten as food. Eg: strawberry, apple, orange, kiwi |
| healthy food | Food that will help your body have good nutrition |
| peel | To pull or strip off the outer covering of something |
| unhealthy | Food that we should not eat all the time to keep our bodies in good condition |
| vegetable | A plant or part of a plant used as food. Eg: carrots, broccoli, cauliflower, green beans. |
| ingredients | The different foods you use to make a meal. |
| spread | Cover a surface with something using a knife e.g. butter or jam. |
| hygiene | Keeping clean (especially our hands) so the food is safe to eat. |
| Pizza | Pizza is a dish of Italian origin consisting of a usually round, flat base of leavened wheat-based dough topped with tomatoes, cheese, and often various other ingredients |



DT Knowledge Organiser: Year 2 - Textiles

What should I already know?

That a 3-D textiles product can be assembled from two identical fabric shapes.

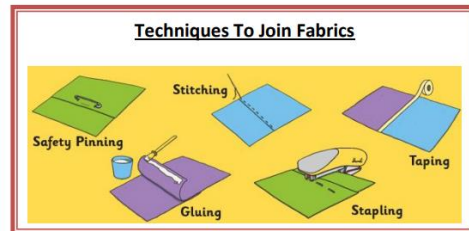
The simple working characteristics of textile materials and components.



| What will I be able to do at the end of this unit? | |
|--|--|
| Explore | different types of designs and their parts |
| Make | Simple drawings and label parts |
| Measure | To measure, mark out, cut, shape and join fabric pieces to make the main part of a scene |
| Evaluate | Against its design criteria. |

Length: 269 m
Construction started: 31 March 1909
Launched: 31 May 1911
Beam: 28 m
Draft: 10 m
Place built: Belfast
Builder: Harland & Wolff

| Key vocabulary | |
|----------------|---|
| Cabin | a small house/unit usually of simple design and construction. |
| Titanic | RMS Titanic was a British passenger liner, operated by the White Star Line, which sank in the North Atlantic Ocean on 15 April 1912 after striking an iceberg. |
| Material | the matter (stuff) from which a thing is or can be made. |
| Textile | a type of cloth or woven fabric. |
| Fabric | a woven or knitted material either made from thread or yarn. |
| Template | a shape or pattern that is cut out of a hard material and used to make the same shape and pattern in other pieces of material |
| Join | link or connect two or more things together |



What will I know by the end of the unit?

A **diorama** is a replica of a scene, typically a three-dimensional full-size or miniature model.

The simple working characteristics of textile materials and components.

Technical vocabulary relating to Textiles.

Design Technology: Skills and Enquiry

Who have you designed your cabin for?
 Which decorations will be most effective in your cabin? Is your cabin typical of the Titanic? Who would choose to stay in your cabin?

DT Knowledge Organiser: Year 2 – Mechanisms – Levers and sliders

What should I already know?
 Think of simple ideas for a product. That glue and sticky tape can be used for joining materials. You can join materials to make a simple product that does not move.

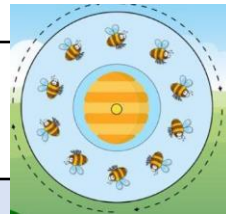


What will I know by the end of the unit?

How to create a sliding mechanism.

How to use levers and pivots to create a moving mechanism.

How to create a wheel mechanism.



Health and Safety



Make sure your **fingers** are not in the way of the scissors.



If you are passing scissors to someone else, **close them** and hold them by the blades so that the other person can take the handles.



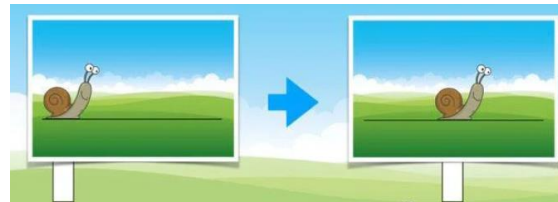
When you have finished using the scissors, put them away.

What will I be able to do at the end of this unit?
 Create a moving picture for a moving story book

design
 apply what you have learnt about the three different types of moving mechanisms to design your own moving minibeast picture for an author who is creating a children's book about minibeasts.

make
 think carefully about the mechanism you are going to make, the equipment you will need, and your order of work, before beginning to create your moving picture based on your design.

evaluate
 you will evaluate your completed moving minibeast picture, using evaluative questions to support you.



Key vocabulary

| | |
|------------------------|---|
| slider | a rigid bar which moves backwards and forwards along a straight line, or up and down Unlike a lever, a slider does not have a pivot |
| levers | a rigid bar which moves around a pivot. Levers are used in many everyday products. |
| mechanism | a device used to create movement in a product. |
| pivots | A fixed part that holds a lever in place as it turns. |
| Moving pictures | Pictures that can |
| wheel mechanism | In a wheel mechanism the pivot allows the outside, larger wheel to move around the inside, smaller wheel. |
| slot | the hole through which a lever or slider is placed to enable part of a picture to move. |