



Kindness -Determination – Resilience – Teamwork – Communication – Respect

**'Together we learn – United we achieve'**

TOWNVILLE INFANTS' SCHOOL

*Design Technology Curriculum Map*

**Cycle A**

Term	Autumn	Spring	Summer
Driver Project	Childhood	Bright Lights, Big City	School Days
DT	Shade and Shelter	Taxi!	Chop, Slice and Mash
Overview	<i>This project teaches children about the purpose of shelters and their materials. They name and describe shelters and design and make shelter prototypes. Children then design and build a play den as a group and evaluate their completed product.</i>	<i>This project teaches children about wheels, axles and chassis and how they work together to make a vehicle move.</i>	<i>This project teaches children about sources of food and the preparatory skills of peeling, tearing, slicing, chopping, mashing and grating. They use this knowledge and techniques to design and make a supermarket sandwich according to specific design criteria.</i>
Knowledge, skills, and concepts	<p><b>What children will know...</b></p> <ul style="list-style-type: none"> <li>A structure should have strong, sturdy supports that are joined so that they do not move. <b>They can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.</b></li> <li>Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li><b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>A play den is a shelter, usually built outside.</li> <li>Two products can be compared by looking at a set of criteria and scoring both products against each one. <b>This can also be done by looking at particular characteristics of each</b></li> </ul>	<p><b>What children will know...</b></p> <ul style="list-style-type: none"> <li>Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li><b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>Two products can be compared by looking at a set of criteria and scoring both products against each one. <b>This can also be done by looking at particular characteristics of each and deciding which is better suited to the purpose.</b></li> <li>Axles and wheels can be attached to chassis in different ways: an axle fixed to a chassis has freely moving wheels, whereas a freely moving axle has fixed wheels.</li> <li>Everyday products are objects that are used routinely at home and school <b>and these can be improved in different ways such as</b></li> </ul>	<p><b>What children will know...</b></p> <ul style="list-style-type: none"> <li>Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li><b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>A healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables and food <b>comes from two main sources: animals and plants.</b></li> <li>Rules are made to keep people safe from danger</li> <li>Food comes from two main sources: animals and plants.</li> </ul>

**and deciding which is better suited to the purpose.**

- Rules are made to keep people safe from danger.
- A shelter is a structure designed to give protection from weather or danger.
- Different materials can be used for different purposes, depending on their properties and **properties of components and materials determine how they can and cannot be used.**
- Specific tools are used for particular purposes and **different tools have characteristics that make them suitable for specific purposes**
- Everyday products are objects that are used routinely at home and school **and these can be improved in different ways such as making them more hardwearing or attractive**

**What children will do...**

- Create a design to meet simple design criteria and one that is purposeful, functional, appealing products- shelters
- Describe **and compare** the similarities and differences between two products.
- Name and explore a range of everyday products and describe how they are used **or can be improved**
- Select and use a range of materials, **beginning to explain their choices.**
- Talk about their own and each other's work, identifying strengths or weaknesses and **explain how closely their product meet the design criteria and how it could be improved**
- Explore **and evaluate** a range of structures (shelters and dens)

**making them more hardwearing or attractive**

- A wheel is a circular object that is connected to an axle that makes vehicles and machines move. An axle is a rod that is connected to the centre of a wheel, which allows it to turn. A chassis is the frame of a vehicle.
- **A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do.**
- Different materials can be used for different purposes, depending on their properties and **properties of components and materials determine how they can and cannot be used.**
- Rules are made to keep people safe from danger.
- Specific tools are used for particular purposes and **different tools have characteristics that make them suitable for specific purposes**
- **Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.**

**What children will do...**


- Create a design to meet simple design criteria.
- Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.
- Describe **and compare** the similarities and differences between two products.
- Talk about their own and each other's work, identifying strengths or weaknesses and **explain how closely their product meet the design criteria and how it could be improved**
- Use wheels and axles to make a simple moving model.

- Using non-standard measures is a way of measuring that does not involve reading scales.
- Fruit and vegetables are an important part of a healthy diet.
- Fruits and vegetables can be mixed to make a healthy salad.
- Salad dressings can improve the flavour of salads.
- Specific tools are used for particular purposes and **different tools have characteristics that make them suitable for specific purposes**
- Some foods come from animals, such as meat, fish and dairy products. Other foods come from plants, such as fruit, vegetables, grains, beans and nuts.

**What children will do...**

- Create a design to meet simple design criteria.
- Describe why a product is important.
- Follow the rules to keep safe during a practical task.
- Measure and weigh food items using non-standard measures, such as spoons and cups. **Prepare ingredients by peeling, grating, chopping and slicing.**
- Select healthy ingredients for a fruit or vegetable salad.
- **Describe the types of food needed for a healthy and varied diet and apply the principles to make a simple, healthy meal**
- Select the appropriate tool for a simple practical task **and explain their choice.**
- Explain why hand washing and cleanliness are important **and describe the importance of a healthy lifestyle**
- Evaluate their ideas and products against design criteria.

	<ul style="list-style-type: none"> <li>Name and explore a range of existing products <b>and explain how they can be improved</b></li> <li>Build structures and construct simple structures using a range of materials and <b>exploring how they can be made stronger, stiffer and more stable.</b></li> <li>Select from and use a wide range of materials and components <b>and explain their choice</b></li> <li>Follow the rules to keep safe during a practical task <b>working safely and hygienically.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.</b></li> <li>Construct simple structures and models using a range of materials and <b>exploring how they can be made stronger, stiffer and more stable.</b></li> <li>Select the appropriate tool for a simple practical task <b>and explain their choice.</b></li> <li>Name and explore a range of everyday products and describe how they are used and how they <b>could be improved.</b></li> <li>Follow the rules to keep safe during a practical task <b>working safely and hygienically.</b></li> </ul>	<ul style="list-style-type: none"> <li>Talk about their own and each other's work, identifying strengths or weaknesses and <b>explain how closely their product meet the design criteria and how it could be improved</b></li> <li>Sort foods into groups by whether they are from an animal or plant source and <b>identify the origin of some common foods</b></li> <li>Use the basic principles of a healthy and varied diet to prepare dishes.</li> <li>Follow the rules to keep safe during a practical task <b>working safely and hygienically.</b></li> </ul>
<b>Key vocabulary</b>	Change, difficulty, improve, criteria, evaluation, strength, weakness, design, frame, function, idea, material, purpose, compare, different, similar, function, permanent, protection, purpose, shelter, structure, temporary, appearance, design, entry point, finish, functionality, product, tarpaulin,	Change, improve, strength, weakness, criteria, design, idea, diagram, compare, difference, similarity, safety, tool, axle, chassis, vehicle, model, part, test, connect, attach, evaluate, material, purpose, axle, chassis, product, taxi, transport, vehicle	Flavour, healthy, ingredient, salad, vegetable, chop, grate, grater, knife, mash, masher, peel, peeler, slice, tear, hygiene, rule, safety, design, design criteria, diagram, label, evaluate, evaluation, improve, success
<b>SMSC</b>	<p><b>Spirituality</b> Reflect on the way in which products and inventions can improve the quality of their lives and the lives of others. Develop a sense of curiosity through disassembly/deconstruction of products</p> <p><b>Moral</b> Understand why we have rules for using equipment</p> <p><b>Social</b> Work as a team, recognizing others strengths and sharing equipment Share and choose appropriate ideas Make healthy choices when designing menus</p>		
<b>British Values</b>	<p><b>Democracy</b> Work collaboratively on a task Have opportunities to allocate roles in group work, take turns and use equipment safely</p> <p><b>Rule of Law</b> Listen to the views of others when evaluating work or products Have opportunities to offer 'constructive criticism'</p> <p><b>Individual Liberty</b> Select the tools and methods they feel are suitable and why</p>		



*Develop their own ideas and interests in design work*

***Tolerance and Respect***

*Respond to the work of others to evaluate their own and others' work*

*Listen to other people's ideas and respect their point of view*

## Cycle B

Term	Autumn	Spring	Summer
Driver Project	<i>Movers and Shakers</i>	<i>Coastline</i>	<i>Magnificent Monarchs</i>
DT	<i>Remarkable Recipes</i>	<i>Beach Hut</i>	<i>Push and Pull</i>
Overview	<i>This project teaches children about sources of food and tools used for food preparation. They also discover why some foods are cooked and learn to read a simple recipe. The children choose and make a new school meal that fulfils specific design criteria.</i>	<i>This project teaches children about making and strengthening structures, including different ways of joining materials.</i>	<i>This project teaches children about three types of mechanism: sliders, levers and linkages. They make models of each mechanism before designing and making a greetings card with a moving part.</i>
Knowledge, skills, and concepts	<p><b>What children will know...</b></p> <ul style="list-style-type: none"> <li>• A healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables and <b>food comes from two main sources: animals and plants.</b></li> <li>• Specific tools are used for particular purposes and <b>have characteristics that make them suitable for specific purposes</b></li> <li>• Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li>• <b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>• Using non-standard measures is a way of measuring that does not involve reading scales.</li> <li>• A recipe is a set of instructions for preparing and cooking dishes</li> <li>• Some foods melt when heated, but then harden when cooled. Some ingredients need to be prepared before they can be cooked or eaten.</li> </ul>	<p><b>What children will know (knowledge)</b></p> <ul style="list-style-type: none"> <li>• Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li>• A structure should have strong, sturdy supports that are joined so that they do not move. <b>They can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.</b></li> <li>• <b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>• Specific tools are used for particular purposes and <b>have characteristics that make them suitable for specific purposes</b></li> <li>• Different materials can be used for different purposes, depending on their properties and <b>properties of components and materials determine how they can and cannot be used.</b></li> <li>• Specific tools are used for particular purposes and <b>tools for working with wood include a junior hacksaw, for cutting; a bench hook, for supporting the wood and as a guide to</b></li> </ul>	<p><b>What children will know (knowledge)</b></p> <ul style="list-style-type: none"> <li>• Design criteria are the explicit goals that a project must achieve <b>and can be communicated in a variety of ways</b></li> <li>• Different materials can be used for different purposes, depending on their properties and <b>properties of components and materials determine how they can and cannot be used.</b></li> <li>• Moving mechanisms are made using stiff materials, such as card, plastic or metal, so as not to bend or break when force is applied.</li> <li>• Models can have moving parts that use levers, sliders, wheels and axles.</li> <li>• Everyday products are objects that are used routinely at home and school <b>and these can be improved in different ways such as making them more hardwearing or attractive</b></li> <li>• <b>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</b></li> <li>• A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do.</li> </ul>

- Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills.
- **Know about personal hygiene and germs including bacteria, viruses, how they are spread and treated, and the importance of handwashing.**
- Rules are made to keep people safe from danger

**What children will do...**

- Describe the types of food needed for a healthy and varied diet and apply the principles to make a simple, healthy meal
- Evaluate their ideas and products against design criteria **and explain how closely their finished products meet their design criteria and say what they could do better in the future.**
- Create a design to meet simple design criteria and one that is purposeful, functional, appealing products
- Sort foods into groups by whether they are from an animal or plant source.
- **Identify the origin of some common foods**
- Measure and weigh food items using non-standard measures, such as spoons and cups. **Prepare ingredients by peeling, grating, chopping and slicing.**
- Select the appropriate tool for a task **and explain their choice.**
- Follow the rules to keep safe during a practical task **working safely and hygienically.**
- Observe what happens when a range of foods, are heated and cooled

**cut; and a G clamp, for holding the bench hook and wood securely.**

- Everyday products are objects that are used routinely at home and school **and these can be improved in different ways such as making them more hardwearing or attractive**
- Rules are made to keep people safe from danger

**What children will do...**

- Choose appropriate components and materials **and suggest ways of manipulating them to achieve the desired effect.**
- Create a design to meet simple design criteria and one that is purposeful, functional, appealing products
- Evaluate their ideas and products against design criteria **and explain how closely their finished products meet their design criteria and say what they could do better in the future.**
- Talk about their own and each other's work, identifying strengths or weaknesses and **explain how closely their product meet the design criteria and how it could be improved**
- Construct simple structures, models or other products using a range of materials, **exploring how they can be made stronger, stiffer and more stable.**
- Follow the rules to keep safe during a practical task **working safely and hygienically.**
- Name and explore a range of existing products **and explain how they can be improved**

Mechanisms include sliders, levers, linkages, gears, pulleys and cams.

- A slider mechanism moves in a straight line. This can be up and down or from side to side. It is made up of a slider and slider support to direct the movement. Real-life examples of slider mechanisms include door bolts and drawers.
- A lever mechanism is a bar that moves around a fixed point called a pivot. The amount of movement depends on the position of the pivot. Levers move an object in an arc shape. Real-life uses of levers include scissors and seesaws.
- Rules are made to keep people safe from danger

**What children will do...**

- Choose appropriate components and materials **and suggest ways of manipulating them to achieve the desired effect.**
- Create a design to meet simple design criteria and one that is purposeful, functional, appealing products
- Talk about their own and each other's work, identifying strengths or weaknesses and **explain how closely their product meet the design criteria and how it could be improved**
- Explore and use a range of mechanisms (levers, sliders, wheels and axles) in models or products.
- Make models with moving parts
- Name and explore a range of existing products **and explain how they can be improved**
- Follow the rules to keep safe during a practical task **working safely and hygienically.**



	<ul style="list-style-type: none"> <li>• <i>Talk about their own and each other's work, identifying strengths or weaknesses and explain how closely their finished products meet their design criteria and say what they could do better in the future.</i></li> </ul>		<ul style="list-style-type: none"> <li>• <i>Evaluate their ideas and products against design criteria and explain how closely their finished products meet their design criteria and say what they could do better in the future.</i></li> </ul>
<b>Key vocabulary</b>	<i>Change, dislike, evaluate, evaluation, improve, success, design, design criteria, equipment, ingredient, instruction, label, method, recipe, test, measure, preparation, grate, grater, property, purpose, measuring spoon, peeler, tongs, tool, masher, pulse, source, stem, vegan, vegetarian, shell fish, pulse, nut, root, plant, diet,</i>	<i>Material, property, use, tool, support, model, construct, frame, structure, joint, stable, stiff, strengthen, equipment, safety, tool, change, improve, strength, success, weakness, change, improve, describe, diagram, label.</i>	<i>Design criteria, finish, improvement, evaluation, product, successful, labelled diagram, plan, sketch, test, material, metal, plastic, property, stiff, different, feature, similar, greetings card, improve, product, bar, component, fixed pivot, force, lever, linkage, machine, mechanism, motion, movement, moving pivot, pivot, slider, slider mechanism.</i>
<b>SMSC</b>	<p><b>Spirituality</b>  <i>Reflect on the way in which products and inventions can improve the quality of their lives and the lives of others.  Develop a sense of curiosity through disassembly/deconstruction of products</i></p> <p><b>Moral</b>  <i>Understand why we have rules for using equipment</i></p> <p><b>Social</b>  <i>Work as a team, recognizing others strengths and sharing equipment  Share and choose appropriate ideas  Make healthy choices when designing menus</i></p>		
<b>British Values</b>	<p><b>Democracy</b>  <i>Work collaboratively on a task  Have opportunities to allocate roles in group work, take turns and use equipment safely</i></p> <p><b>Rule of Law</b>  <i>Listen to the views of others when evaluating work or products  Have opportunities to offer 'constructive criticism'</i></p> <p><b>Individual Liberty</b>  <i>Select the tools and methods they feel are suitable and why  Develop their own ideas and interests in design work</i></p> <p><b>Tolerance and Respect</b>  <i>Respond to the work of others to evaluate their own and others' work  Listen to other people's ideas and respect their point of view</i></p>		