Design and Technology
Year 1

Autumn 1 - Shade and Shelter	
Previous learning	
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.	
Substantive Knowledge	**Disciplinary knowledge**
Children from Patrington Primary Academy will be able to participate fully in an increasingly technological world and have an understanding of how to be critical and reflective consumers. They will be able to use their practical, creative and reflective skills to become consumers and innovators who are well informed and can use their own skills to develop products for the future.	By the end of Key Stage Two, children at Patrington Primary Academy will be able to: prepare ingredients safely and hygienically and cook nutritious food. They will be able to design their own products using a range of materials and evaluate their product against success criteria. The children will generate their own product ideas by reflecting upon existing products and then developing prototypes. Finally, in order to make successful products, the children will have a secure understanding of mechanical structures, such as: gears, pulley systems and levers.

Lesson 1	**Technical Knowledge**
	• To know everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose. • To know that different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.
Lesson 2	**Design**
	• Is able to design criteria are the explicit goals that a project must achieve. • Can create a design to meet simple design criteria.
Lesson 3	**Make**
	• Can name and explore a range of everyday products and describe how they are used. • To be able to construct simple structures, models or other products using a range of materials.
Lesson 4	**Evaluate**
	• To know a strength is a good quality of a piece of work. A weakness is an area that could be improved. • Can talk about their own and each other's work, identifying strengths or weaknesses and offering support.

Vocabulary	Sticky Knowledge
• Product, design, strengthening, materials, float, sink, heavy, light, structure.	• To know everyday products are objects that are used routinely at home and school. • To know that different materials can be used for different purposes, depending on their properties. • Cardboard is a stronger building material than paper • Plastic is light and can float.

Spring 2 - Taxi mechanics, wheels and axles	
Previous learning	
In DT the children will revisit parts of a vehicle including axis, chassis and wheels, this also builds upon construction activities experienced in EYFS.	
Substantive Knowledge	**Disciplinary knowledge**
Children from Patrington Primary Academy will be able to participate fully in an increasingly technological world and have an understanding of how to be critical and reflective consumers. They will be able to use their practical, creative and reflective skills to become consumers and innovators who are well informed and can use their own skills to develop products for the future.	By the end of Key Stage Two, children at Patrington Primary Academy will be able to: prepare ingredients safely and hygienically and cook nutritious food. They will be able to design their own products using a range of materials and evaluate their product against success criteria. The children will generate their own product ideas by reflecting upon existing products and then developing prototypes. Finally, in order to make successful products, the children will have a secure understanding of mechanical structures, such as: gears, pulley systems and levers.

Lesson 1	**Technical Knowledge**
	● Name and explore a range of everyday products and describe how they are used. ● Describe the similarities and differences between two products.
Lesson 2	**Technical Knowledge**
	● Describe the similarities and differences between two products. ● Specific tools are used for a particular purpose. ● Children need to know that an axle is a rod or spindle that passes through the centre of a wheel to connect two wheels.
Lesson 3	**Design**
	● Create a design to meet simple design criteria ● Select the appropriate tool for a simple practical task
Lesson 4	**Make**
	● Select and use a range of materials beginning to explain their choices. ● Can use wheels and axles to make a simple moving model
Lesson 5	**Evaluate**
	● Know that strength is a good piece of work. A weakness is an area that could be improved ● Talk about their own and each other's work, identifying strengths or weaknesses and offering support.

Vocabulary	Sticky Knowledge
● Slider, pull, up, down, move, plan, design, make, evaluate, strong	● An axle is a rod or spindle that passes through the centre of a wheel to connect two wheels. ● Wheels help an object move forwards and backwards.

Summer 1 - Food and Nutrition	
Previous learning	
We revisit how to keep safe using knives and we will introduce the skills of peeling, chopping and grating. They use this knowledge and techniques to design and make a sandwich according to specific design criteria. Tell the children that they will be designing and making a new sandwich, which could be sold in a supermarket. Provide a range of supermarket sandwiches, rolls and wraps for the children to investigate by looking and tasting. Encourage the children to think about who might buy supermarket sandwiches and what they might look for in a sandwich.	
Substantive Knowledge	**Disciplinary knowledge**
Children from Patrington Primary Academy will be able to participate fully in an increasingly technological world and have an understanding of how to be critical and reflective consumers. They will be able to use their practical, creative and reflective skills to become consumers and innovators who are well informed and can use their own skills to develop products for the future.	By the end of Key Stage Two, children at Patrington Primary Academy will be able to: prepare ingredients safely and hygienically and cook nutritious food. They will be able to design their own products using a range of materials and evaluate their product against success criteria. The children will generate their own product ideas by reflecting upon existing products and then developing prototypes. Finally, in order to make successful products, the children will have a secure understanding of mechanical structures, such as: gears, pulley systems and levers.

Lesson 1	**Technical Knowledge**
	● To know that 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. ● To be able to sort foods into groups - whether they are from an animal or plant source.
Lesson 2	**Technical Knowledge**
	● Know that using non-standard measures is a way of measuring that does not involve reading scales. For example, weight may be measured using a balance scale and lumps of plasticine. Length may be measured in the number of handspans or pencils laid end to end ● Know that fruit and vegetables are an important part of a healthy diet. It is recommended that people eat at least five portions of fruit and vegetables every day. ● Describe why a product is important
Lesson 3	**Design**
	● Can measure and weigh food items using non-standard measures, such as spoons and cups. ● Create a design to meet simple design criteria
Lesson 4	**Make**
	● Can select healthy ingredients for a fruit or vegetable salad. ● To know specific tools are used for particular purposes. ● To make a sandwich according to specific design criteria. ● Can select the appropriate tool for a simple practical task.
Lesson 5	**Evaluate**
	● Know that strength is a good piece of work. A weakness is an area that could be improved ● Talk about their own and each other's work, identifying strengths or weaknesses and offering support.

Vocabulary	Sticky Knowledge

• Safe, cut. clean, healthy, fruit, vegetables, diet,	• To know that some foods come from animals. • To know other foods come from plants. • To know that people eat at least five portions of fruit and vegetables every day.

Summer 2 - Textiles	
Previous learning	
In this topic children design and make a patch to be combined with the whole class to make a picnic patchwork quilt. In previous lessons, the children have looked at and practised using tools safely, how to combine materials together and how to design, make and evaluate.	
Substantive Knowledge	**Disciplinary knowledge**
Children from Patrington Primary Academy will be able to participate fully in an increasingly technological world and have an understanding of how to be critical and reflective consumers. They will be able to use their practical, creative and reflective skills to become consumers and innovators who are well informed and can use their own skills to develop products for the future.	By the end of Key Stage Two, children at Patrington Primary Academy will be able to: prepare ingredients safely and hygienically and cook nutritious food. They will be able to design their own products using a range of materials and evaluate their product against success criteria. The children will generate their own product ideas by reflecting upon existing products and then developing prototypes. Finally, in order to make successful products, the children will have a secure understanding of mechanical structures, such as: gears, pulley systems and levers.
Lesson 1	**Technical Knowledge**
	• To know that different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows. • Select and use a range of materials, beginning to explain their choices. • Know that fabric can be decorated using materials and small objects, such as buttons and sequins. Decorations can be attached to the fabric by glueing, stapling or tying.
Lesson 3	**Design**
	• Create a design using a simple software using this as a mock up for their project (make).
Lesson 4	**Make**
	• Can use glueing, stapling or tying to decorate fabric, including buttons and sequins. • As well as glueing and stapling, children start to cut and join fabrics using simple stitches.
Lesson 5	**Evaluate**
	• Know that strength is a good piece of work. A weakness is an area that could be improved • Talk about their own and each other's work, identifying strengths or weaknesses and offering support.
Vocabulary	**Sticky Knowledge**
• Materials, transparent, fabric, glueing, stapling, tying, project, strengthen, improve.	• To know that different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent. • Decorations can be attached to the fabric by glueing, stapling or tying.