

Year 5: Autumn Moving Mechanisms Design and Technology	
Previous learning	
<p>Previous years skills and knowledge will support children in developing more complex and detailed mechanisms adding electric circuits in year to their build (year 4 knowledge). The use of pulleys, axles and wheels has been ingrained in all aspects of mechanisms throughout the year which will aid children into honing their knowledge and design skills.</p>	
Substantive Knowledge in DT	Disciplinary knowledge in DT
<p>Children from Alderman Cogan's 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.</p>	<p>By the end of Key Stage Two, children at Alderman Cogan's 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.</p>
Lesson 1	Technical Knowledge <ul style="list-style-type: none"> To understand that pneumatic systems use energy that is stored in compressed air to do work, such as inflating a balloon. These effects can be achieved using syringes and plastic tubing. To be able to explain how the design of a product has been influenced by the culture or society in which it was designed or made. A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products. To understand that there are many rules for using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting edge pointing away from their bodies. All tools should be cleaned and put away after use and should not be used if they are cracked or loose. To know that testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to designs during manufacture. To understand that equipment and devices can be controlled by pressing buttons on a control panel, such as on a washing machine or microwave.
Lesson 2	Design <ul style="list-style-type: none"> To use pattern pieces and computer aided design packages to design a product. To be able to name and select increasing appropriate tools for a task and use them safely.
Lesson 3	Make <ul style="list-style-type: none"> Use mechanical systems in their products, such as pneumatics. Select and design materials with precision. Link a physical device to a computer or tablet so that it can be controlled, such as turning on a LED or changing motor speed.

Lesson 4	Evaluate
	<ul style="list-style-type: none"> • Test and evaluate projects against a detailed specification and make adaptations as they develop the product. (Design and Evaluate stage)
Vocabulary	
<ul style="list-style-type: none"> • Functionality, design, criteria, design, decisions, prototype, reinforce. • Rotation, spindle, mechanical system, rotary, linear. • Code, program, software, products, remote access, motor, control panel. 	

Year 5: Spring Eat the Seasons Design and Technology	
Previous learning	
<p>Previous years skills and knowledge will support children through this project in planning and preparing healthy, well portioned and local foods. Children have learnt how to choose appropriate tools and use them safely. Children have developed an understanding of what a balanced diet is and how to keep their bodies healthy. Their previous knowledge and skills will support them to design more challenging and enhanced meals.</p>	
Substantive Knowledge in DT	Disciplinary knowledge in DT
<p>Children from Alderman Cogan's 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.</p>	<p>By the end of Key Stage Two, children at Alderman Cogan's 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.</p>
Lesson 1	Technical Knowledge
	<ul style="list-style-type: none"> • To understand that sweet dishes are usually desserts, such as cakes, fruit pies and trifles. Savour dishes usually have a salty flavour rather than a sweet one. • To understand that a balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions. • To understand that seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper.
Lesson 2	Technical Knowledge
	<ul style="list-style-type: none"> • To understand that there are many rules for using tools safely and these may vary depending on the tools being used. • All tools should be cleaned and put away after use and should not be used if they are cracked or loose.
Lesson 3	Design
	<ul style="list-style-type: none"> • To name and select increasing appropriate tools for a task and use them safely. • Test and evaluate projects against a detailed specification and make adaptations as they develop the product. • To describe what seasonality means and explain why it is beneficial. Why are they using them in the recipe/dish?

Lesson 4	Make
	<ul style="list-style-type: none"> Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish.
Lesson 5	Evaluate
	<ul style="list-style-type: none"> To evaluate meals and consider if they contribute towards a balanced diet.
Vocabulary	
<ul style="list-style-type: none"> Nutrition, cost , hygienic, seasonal, balanced diet, locally sourced. 	

Year 5: Summer Architecture Design and Technology	
Previous learning	
Previous years skills and knowledge will support children through this project through understanding of what makes a strong structure, why designers have chosen certain materials and why designers create prototypes.	
Substantive Knowledge in DT	Disciplinary knowledge in DT
Children from Alderman Cogan's 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 Alderman Cogan's 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
	<ul style="list-style-type: none"> To understand that culture is the language, invention, ideas and art of a group of people. To understand that a society is all the people in a community or group.. To understand that culture drives designs of some products, for example knives and forks are used in the western world, whereas chopsticks are mainly used in China and Japan. To understand that the designs of products needs to take into account the culture of the target audience. For example, colours might mean very different things in different cultures.
Lesson 2	Technical Knowledge
	<ul style="list-style-type: none"> To understand that various methods can be used to support a framework. These include cross braces, guy ropes and diagonal struts. To understand that frameworks can be built using lollipop sticks, skewers and bamboo canes. To understand that there are many rules for using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting edge pointing away from their bodies. All tools should be cleaned and put away after use and should not be used if they are cracked or loose. To know that testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to designs during manufacture.

Lesson 3	Design
	<ul style="list-style-type: none"> To be able to explain how the design of their product has been influenced by the culture or society in which it was designed or made. To name and select increasing appropriate tools for a task and use them safely.
Lesson 4	Make
	<ul style="list-style-type: none"> To build a framework using a range of materials to support mechanisms. Whilst making their design children need to select and combine materials with precision.
Lesson 5	Evaluate
	<ul style="list-style-type: none"> Test and evaluate projects against a detailed specification and make adaptations as they develop the product.
Vocabulary	
<ul style="list-style-type: none"> Functionality, design, criteria, design decisions, prototype, reinforce. 	

Year 5: Summer Design and Technology Textiles	
Previous learning	
Previous years skills and knowledge will support children through this project through skills of using a variety of stitches, the ability to choose appropriately tools and use tools safely as well as developing the ability to thread a needle and use stitching to create their decided designs.	
Substantive Knowledge in DT	Disciplinary knowledge in DT
Children from Alderman Cogan's 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 Alderman Cogan's 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
	<ul style="list-style-type: none"> To understand that a collage is artwork made by sticking materials, such as scraps of paper or fabric onto a background. To understand that a mixed media collage is made using various materials and media such as ink and paint.
Lesson 2	Technical Knowledge
	<ul style="list-style-type: none"> To understand that materials should be cut and combined with precision. For example pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques. To understand that applique is a technique where pieces of materials are attached to another material by stitches or glueing.

Lesson 3	<p>Design</p> <ul style="list-style-type: none"> Using a simple software to create a mood board to support the design process. Looking at what stitches and materials they may use as well as creating a design of what they want their creation to look like. During evaluation comparison of how they have done to their design, what have they done differently, why?
Lesson 4	<p>Make</p> <ul style="list-style-type: none"> To use a combination of stitches and fabrics with imagination to create a mixed media collage. Select and combine materials with precision. Use applique to add decoration to a product or artwork.
Lesson 5	<p>Evaluate</p> <ul style="list-style-type: none"> Test and evaluate projects against a detailed specification and make adaptations as they develop the product.
Vocabulary	
<ul style="list-style-type: none"> Seam, reinforce, pattern, pieces, stitch names, right side, wrong side. 	