Year 1		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn 2/ Spring1: **Unit Title:** Mechanisms: Wheels and Axles.	Children at the expected standard will: ● Design purposeful, functional, appealing products for themselves and other users based on design criteria ● Generate, develop, model and communicate their ideas through talking, drawing, templates and mock- ups. ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ● Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ● Explore and evaluate a range of existing products ● Evaluate their ideas and products against design criteria ● Build structures, exploring how they can be made stronger, stiffer and more stable ● Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	Children can: ● Design, make a evaluate a trailer for Mrs Armitage to carry her stuff on ● Ensure that their design is functional and appealing. ● Communicate their ideas through drawings and mocks of their designs. ● Choose which tools are appropriate for the task that they are needed for (eg scissors and saws). ● Choose which materials they require to make their trailer. ● Evaluate their trailer against their design criteria. ● Explore and explain how to make their trailer stronger, stiffer and more stable. ● Use and connect wheels to their trailer so it can move.
Summer: **Unit Title:** Textiles: Templates and joining.	Children at the expected standard will: ● Design purposeful, functional, appealing products for themselves and other users based on design criteria ● Generate, develop, model and communicate their ideas through talking, drawing, templates and mock- ups. ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ● Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ● Explore and evaluate a range of existing products ● Evaluate their ideas and products against design criteria	Children can: ● Design, make and evaluate a bag that the lighthouse keeper can keep his lunch in. ● Ensure their design is functional and appealing. ● Communicate their ideas through drawings, templates, talking and mocks of their designs ● Choose which tools are appropriate for the task that they are needed for (eg scissors and saws). ● Select which materials and textiles are most appropriate to create their bag. ● Evaluate their bag against their design criteria.

Year 2		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn 2/ Spring 1: **Unit Title:** Mechanical Systems: Levers and sliders	Children at the expected standard will: ● Design purposeful, functional, appealing products for themselves and other users based on design criteria ● Generate, develop, model and communicate their ideas through talking, drawing, templates and mock- ups. ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ● Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ● Explore and evaluate a range of existing products ● Evaluate their ideas and products against design criteria ● Build structures, exploring how they can be made stronger, stiffer and more stable ● Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	Children can: ● Design, make and evaluate a page for a book which contains a slider or lever. ● Ensure that their design is functional and appealing. ● Communicate their ideas through drawings, discussions, templates and mocks of their designs. ● Choose which tools are appropriate for the task that they are needed for (eg scissors and saws). ● Choose which materials they require to make their sliders or levers. ● Evaluate their sliders or levers against their design criteria. ● Explore and explain how to make their sliders and levers stronger, stiffer and more stable.
Summer: **Unit Title: Food:** Preparing fruit and veg	Children at the expected standard will: ● Design purposeful, functional, appealing products for themselves and other users based on design criteria ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ● Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ● Evaluate their ideas and products against design criteria ● Use the basic principles of a healthy and varied diet to prepare dishes ● Understand where food comes from.	Children can: ● Understand what a healthy and balanced diet is. ● Can use their knowledge of healthy and balanced diets to prepare a smoothie. ● Understand where a range of food comes from. ● Design and create a smoothie based on a design criteria. ● Select which tools are needed to prepare the smoothie. ● Chn can evaluate their design criteria against their final product.

Year 3		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn: **Unit Title:** Mechanical systems: Pneumatics	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Children can: ● Research and evaluate a range of existing products which contain pneumatics. ● Create a design criteria which is aimed at a particular individual or group. ● Generate their ideas and communicate them with others. ● Select the appropriate tool needed to complete the necessary task. ● Select which materials are best suited for creating a product which contains pneumatics. ● Research and evaluate existing products and discuss how this will impact their design. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which contain pneumatics. ● To develop the structural stability of their product through their knowledge of how to strengthen, stiffen and reinforce it.
Spring: **Unit Title:** Mechanical systems: Levers and Linkages	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	Children can: ● Research and evaluate a range of existing cards which contain levers and linkages.

	• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	• Create a design criteria which is aimed at a particular individual or group. • Generate their ideas and communicate them with others. • Select the appropriate tool needed to complete the necessary task. • Select which materials are best suited for creating a card which contains levers and linkages. • Research and evaluate existing products and discuss how this will impact their design. • Carry out discussions with others about their work and listen to their advice on how to improve it. • To understand how inventors and events have influenced products which contain levers and linkages. • To develop the structural stability of their card through their knowledge of how to strengthen, stiffen and reinforce it.
Summer: **Unit Title:** Textiles: 2D shape to 3D product	Children at the expected standard will: • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design	Children can: • Research and evaluate a range of existing purses or wallets. • Create a design criteria which is aimed at a particular individual or group. • Generate their ideas and communicate them with others. • Select the appropriate tool needed to complete the necessary task. • Select which materials are best suited for creating a purse or wallet which needs to contain coins and notes. • Research and evaluate existing products and discuss how this will impact their design. • Carry out discussions with others

	criteria and consider the views of others to improve their work	about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which contain stitches. ● To develop the structural stability of their purse or wallet through their knowledge of how to strengthen, stiffen and reinforce it.

Year 4		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn: **Unit Title:** Structures: Shell structures using CAD.	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of computing to program, monitor and control their products.	Children can: ● To research a range of packaging. ● To develop a design criteria to suit the needs of the individuals or groups. ● To use computer aided design to develop their prototypes and final product. ● Listen to and act upon the advice of others to improve their design. ● Investigate a range of products which use shell structures. ● Evaluate their shell structure against their design criteria. ● Understanding how inventors have influenced the creation of products which contain shell structures. ● Understand how their programming of computers can influence their design which contain shell structures.
Spring and Summer: **Unit Title:** Food discovery	Children at the expected standard will: ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Understand and apply the principles of a healthy and varied diet ● Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques ● Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Children can: ● Understand where food comes from. ● Understand what makes a healthy and balanced diet. ● Select which fruit and vegetables are best suited to be planted in the garden and why. ● Use a range of tools and equipment to care for their crop. ● Prepare a range of dishes which incorporate the food that they have grown. ● Understand what measures need to be taken to care for their crop. ● Use a range of tools and equipment

		to harvest their crop. ● Understand seasonality and how this affects the food they can grow. ● Understand the process of growing crops on a larger scale.

Year 5		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn: **Unit Title:** Mechanical Systems: Cams	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Children can: ● Research and evaluate a range of existing moving pictures which contain cams. ● Create a design criteria which is aimed at a particular individual or group. ● Generate their ideas and communicate them with others. ● Select the appropriate tool needed to complete the necessary task. ● Select which materials are best suited for a moving picture which contains cams. ● Research and evaluate existing products and discuss how this will impact their design. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which use cams. ● To develop the structural stability of their moving picture through their knowledge of how to strengthen, stiffen and reinforce it.
Spring: **Unit Title:** Microbits	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and	Children can: ● Research and evaluate a range of existing products which incorporates an LED screen and discuss how this will impact their design. ● Create a design criteria which is aimed at a particular individual or

	computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use microbits in their products successfully,	group. ● To determine their end user and why their product is needed. ● Select the appropriate tools needed to complete the necessary task. ● Measure accurately. ● Select which materials are best suited for their robots. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which contain electrical circuits. ● To develop the structural stability of their robots through their knowledge of how to strengthen, stiffen and reinforce it. ● Input a series of algorithms onto a microbit and debug where necessary.
Summer: **Unit Title:** Structures: Frame Structures.	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world	Children can: ● Research and evaluate a range of existing bridges. ● Create a design criteria which is aimed at a particular individual or group. ● Generate their ideas and communicate them with others. ● Select the appropriate tool needed to complete the necessary task. ● Select which materials are best suited for a bridge. ● Research and evaluate existing products and discuss how this will impact their design. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced the creation

	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	and development of bridges. • To develop the structural stability of their bridge through their knowledge of how to strengthen, stiffen and reinforce it.

Year 6		
Unit of work	Statutory Guidance National Curriculum Expectations	Unit End Points
Autumn: **Unit Title:** Food: celebrating culture and seasonality.	Children at the expected standard will: ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Understand and apply the principles of a healthy and varied diet ● Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques ● Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Children can: ● Understand where food comes from. ● Understand what makes a healthy and balanced diet. ● Use a range of tools and equipment to prepare their dishes. ● Prepare a range of dishes. ● Can understand seasonality and the impact this has on food. ● Understand how a range of ingredients are grown, caught, reared and processed.
Spring: **Unit Title:** Mechanical systems: Gears and pulleys	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Children can: ● Research and evaluate a range of existing vehicles which contain gears and pulleys. ● Create a design criteria which is aimed at a particular individual or group. ● Generate their ideas and communicate them with others. ● Select the appropriate tool needed to complete the necessary task. ● Select which materials are best suited for creating a vehicle which contains gears and pulleys. ● Research and evaluate existing products and discuss how this will impact their design. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which contain gears and pulleys.

		● To develop the structural stability of their vehicle through their knowledge of how to strengthen, stiffen and reinforce it.
Summer: **Unit Title:** Textiles: Combining different fabric shapes.	Children at the expected standard will: ● Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ● Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ● Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ● Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● Understand how key events and individuals in design and technology have helped shape the world ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Children can: ● Research and evaluate a range of existing products which have been created using computer aided design software. ● Create a design criteria which is aimed at a particular individual or group. ● Generate their ideas and communicate them with others. ● Select the appropriate tool needed to complete the necessary task. ● Select which materials are best suited for creating a product using computer aided design software. ● Research and evaluate existing products and discuss how this will impact their design. ● Carry out discussions with others about their work and listen to their advice on how to improve it. ● To understand how inventors and events have influenced products which have been created uses computer aided design software.