2022-2023	**Design Technology Knowledge Progression**					
Willow EYFS	Term 1: Minibeasts and Ourselves in our Wonderful World • I can explore different textures and materials to create simple models using my imagination and to express my ideas. • I know how to use different materials to build models and create minibeast habitats. • I can use junk modelling materials and joining materials. • I know how to use threading materials independently to make models.	Term 2: People Who Help Us (Bonfire Night/Christmas) • I know how to keep safe and use a cane to safely cook marshmallows over an open fire. • I can use large materials and objects to construct safely outside and in the Forest School, building for different purposes and using my imagination. • I can explore using different tools, such as hammers and nails to create pictures using tac boards. • I can explore how things work.	**Term 3: Dinosaurs** • I know how to make a jam sandwich. I know how to spread butter and cut bread, holding and using a knife correctly. • I can explore using different techniques for joining materials, with different adhesives and discuss which one works best. • I can talk about what I have made, how I made it and what materials I have used and why.	**Term 4: Castles and Fairy tales** • I know how to use a junior hacksaw to create jewellery. I can cut sections of wood and use a tool to poke out the middle of the wood to help me thread wool through. • I know how to use scissors to cut materials and wool. • I can use a sharp knife, wearing gloves to cut through vegetables safely and with control to make a healthy vegetable soup.	**Term 5: Eric Carle Art (animals/Under the Sea/Plants)** • Junk model animals. I can talk about what I have made and what I like and dislike about my creation. • I can talk about how I could make my model better and what I might do differently next time. • I can create collaboratively using inside and outside construction equipment and materials.	**Term 6: Space** • I can design and create a rocket. • I know how to think about form and function. • I know how to choose the best shapes/materials for different purposes.
Beech	**Term 2: Old and New Toys – Mechanisms (Wheels and Axels)** • I know that a vehicle is something that is used to carry people and objects from one place to another. • I know that there are many different types of vehicles that have a range of purposes e.g., taxi, bus, ambulance, coach, car, tractor, and lorries. • I know that a wheel is a circular object that spins below a vehicle to help it move. • I know that an axle is a rod that holds wheels together under a vehicle. • I know that wheels rotate round on an axel. • I know that a chassis is the base frame of a vehicle.		**Term 4: Up, Up and Away – Structures (Kites)** • I know that structures are built for a purpose. • I know that structures can be large or small. • I know that a diamond is a popular kite shape. • I know that a flat kite, box kite, sled kite and a delta kite are some of the different types of kites you can get. • I know that kites are made for different purposes e.g., entertainment, religion. • I know that most kites are made from some of the following materials: lightweight paper, nylon, bamboo/wood and plastic.		**Term 6: Seaside Secrets – Food Technology (Healthy Sandwiches)** • I know fruit and vegetables are an essential part of a balanced diet; we are recommended to have 5 portions of either fruit or vegetables per day. • I know fruit and vegetables can be farmed or grown at home. • I know a fruit usually contains a plant or tree's edible seed; a vegetable is a plant used for food. • I know nutrients are the things in food that the body needs to remain healthy. • I know that sensory evaluation is when senses are used to evaluate qualities such as appearance, smell, taste, texture (mouth feel).	

	• I know that a mechanism is a device used to create movement in a product and wheels and axles are examples of this. • I know that a fixed axle means the object cannot be steered. • I know that my finished car model must be able to be moved on wheels with ease. • I know that wheels can be secured on an axle with washers. • I know that some materials are stronger and more rigid (stiffer) than others e.g., thick card is stronger and more rigid than paper. • I know how to create simple design criteria and communicate ideas through talking, drawing and labelling. • I know how to evaluate my car-making process with a partner using written methods. • I know how to identify what I have done well and suggest how to make improvements.	• I know that the main parts of a kite include sail, spars, tail, bridle lines, vents and keel. • I know how to test materials to see which ones are most suitable for kite making. • I know how to identify and describe the tools and materials needed to make a kite. • I know how to safely cut shapes in tissue paper, how to safely use a stapler to join rolled paper, and how to safely use a hole puncher with card. • I know how to safely assemble the frame of a kite using wooden skewers. • I know how to evaluate my kite-making process with a partner using written methods. • I know how to identify what I have done well and suggest how to make improvements.	• I know that a healthy sandwich should include vegetables. • I know how to hold a knife safely to cut food. • I know how to spread butter evenly onto bread. • I know about the benefits of whole grain flour, opposed to a plain flour and the reasons why some types of bread, such as wholemeal, are healthier than others and can be a source of carbohydrate in a healthy balanced diet. • I know how to evaluate my sandwich-making process with a partner using written methods. • I know how to identify what I have done well and suggest how to make improvements.
Maple	**Term 2: Florence Nightingale – Electrical Systems (Making a Light)** • I know that before gas or electric lighting were invented, the greatest light source usually came from fire with candlelight or oil lamps. • I know that lamps or torches are used for comfort in dark areas or areas that may become dark at certain times, such as at night or in an emergency. • I know that most torches and lamps are now powered by electricity. • I know that electricity is a type of energy that is used to power lots of things. • I know that electricity can flow through wires and cables. It can also be stored in batteries or cells. • I know that electricity can flow through electrical circuits and that this is known as the current. • I know that a bulb gives out light when electricity passes through it. • I know that a switch is a circuit part that you can open or close to allow electricity to flow through or to stop it flowing through.	**Term 4: The History of Chocolate – Food Technology (Chocolate Bars)** • I know that chocolate is a sweet, brown food made from cocoa beans. • I know that it usually comes in solid bars but can also be powdered or melted. • I know that chocolate is a sweet treat that is eaten all around the world. • I know that a chocolatier is a maker or seller of chocolate. • I know that cocoa beans grow in humid tropical climates and are mostly grown in countries around the equator. • I know that 70% of the world's cocoa beans now come from West Africa. • I know that the fair trade movement aims to make sure cocoa farmers are paid fairly for the work they do and the cocoa beans they produce. • I know that market research means finding out which products are already for sale and what other companies are making.	**Term 5: Castles – Free Standing Structures (Castles)** • I know that a castle is a type of building that used to be built hundreds of years ago to defend land and be a home for Kings, Queens and other very rich people. • I know that castles have lots of features such as towers, turrets, battlements, moats, gatehouses, drawbridges and flags. • I know that a structure is something that is able to stand, usually on its own. • I know that a structure needs to have a stable base to make sure it doesn't topple over. • I know that structures can be made stronger by choosing sturdy materials and making sure it's components are joined securely. • I know that layering materials can make them stronger.

	• I know that a simple circuit must include: a bulb, 2 electrical wires with crocodile clips, a battery, and a battery pack. • I know that a bulb will only light if it is in a closed circuit. • I know how to design an appropriate electrical circuit for a torch. • I know that sketches can be used to show initial designs and ideas. These can be adapted to improve ideas leading to the final outcome. • I know that a prototype can be used to model a design and product to recognise improvements that need to be made to my design. • I know how to work accurately and safely with a variety of tools, materials and electrical components to make a lamp or torch. • I know that using a glue gun is a stronger method of joining materials than PVA or Pritt stick and I know how to use a glue gun safely. • I know how to use metals within a product and that welding is a process that is used when joining metals. • I know how to make an electrical circuit and explain how it works. • I know how to create a casing around the circuit using materials that are good insulators.	• I know that companies use eye catching designs and clever packaging to attract the buyers of a product. • I know that food advertising includes: slogans, promises, well-chosen vocabulary, logos and eye-catching pictures. • I know that a preference test means trying different things (foods)and deciding which is preferred. • I know that when I design my own chocolate bar I will have to think of the ingredients, the flavour, the texture and the cost of my product. • I know how to prepare food hygienically. • I know how to prepare food safely using techniques such as slicing, grating, chopping, melting and pouring, and the bridge and claw.	• I know that the shape of materials can be changed to improve the strength and stiffness of structures. • I know that cylinders are a strong type of structure. • I know that a join is a place or a line where two or more materials are connected or fastened together for a specific purpose. • I know how to use the correct joining materials to make my product long lasting. • I know that different mechanisms such as hinges, levers and pivots can produce different types of movement. • I know that a mechanism is a set of related parts used to create movement. • I know that pulleys and levers are mechanism that make things move. • I know how to make a functional pulley system for a drawbridge in my castle design.
Hazel	**Term 2: Road Trip USA - Mechanical posters** • I can explore mechanical systems and how they work. • I can draw a simple annotated design. • I can make a prototype of a mechanical system that uses levers and linkages. • I know how to use sketches to develop and communicate my design ideas. • I know how to plan and evaluate my design and finished product. • I know which equipment and tools I will need to work accurately.	**Term 4: Enough for Everyone - Food Technology (Bread)** • I know that bread is a staple food product eaten all over the world. • I know that bread is one of the oldest known prepared foods and can explain why it is historically important. • I know and can explain how bread contributes to a healthy diet. • I know who Thomas Warburton is and can explain why he is a significant person in the history of bread. • I know that there are many different types of bread e.g. sliced, buns, flat, crusty, sweet.	**Term 6: Ancient Greeks – Textiles (Greek Sandals)** • I know that sandals are lightweight shoes that have a sole and straps. • I know that people usually wear sandals in warmer climates or during warmer parts of the year to keep their feet cool and dry. • I know that in Ancient Greece sandals were the most common type of footwear worn by men and women. • I know that sandals were cheaper and easier to make because they required less materials than shoes.

	• I know how to develop and improve my finished product based on the design and building process carried out. • I can name the parts and functions of a lever and linkage mechanical system.	• I know that bread can be shaped into lots of different shapes including the cottage loaf, cloverleaf, a rosette and a twist. • I know that water, yeast, flour, salt and butter are essential ingredients needed to make bread. • I know that yeast is used to cause the dough to rise and give the bread a light and spongey texture. • I know that there are lots of other ingredients that can be added to bread to change the taste and texture e.g. seeds, fruit, icing. • I know how to investigate and analyse existing bread products and discuss their characteristics. • I know how to develop a design criteria based on my research and ensuring I use nutritious ingredients. • I know that kneading is where the dough is stretched to develop the gluten and create an elastic dough. • I know that proving is where the dough is left to rise. • I know that baking is a method of preparing food that uses dry heat, normally in an oven. • I know and understand issues related to food safety and hygiene. • I know how to follow a recipe and safely use kitchen equipment to prepare and make my bread.	• I know that people still wear sandals inspired by the Ancient Greeks today. • I know that a design needs to consider appearance, function and cost. • I know how to create a functional template based on my design of a Greek sandal. • I know that many different materials can be used to make a product based on its different qualities. • I know how to plan the order of my work, choosing appropriate materials, tools and techniques. • I know how to use suitable joining techniques to create a functional Greek sandal.
Oak	**Term 1 and 2: Ancient Egyptians – Mechanical Systems** • I know that mechanisms are simple machines with moving parts that change input forces and movement into a set of output forces • I know that pulleys, gears and levers are examples of mechanisms • I know that pulleys can be used to lift a heavy load • I know that the more wheels in a pulley, the easier it is to lift the weight (less force required) • I know that gears or cogs can be used to change the speed, force or direction of a motion	**Term 3 and 4: The Suffragettes – Food Technology and Textiles** • I know how to safely prepare and cook a variety of dishes using a range of cooking methods (including on the campfire in Forest School) • I know how to evaluate and suggest improvements following cooking specific dishes • I know where food comes from – where and how it is grown, reared, caught and processed • I know how food and where it comes from impacts meal design • I know the importance of and can describe and healthy and varied diet	**Terms 5 and 6: South America - Creating computer controlled products using Crumble Controllers** • I know how to design an innovative, functional appealing product which is fit for purpose • I know how to generate, develop, model and communicate my ideas • I know how to select from a wide range of tools and equipment to perform practical tasks • I know how to select from and use a wide range of materials and components according to their functional properties and aesthetic qualities

	• I know that when two gears are connected, they always turn in the opposite direction to each other • I know that levers can be used to lift a load • I know that a lever always rests on a pivot • I know different real examples of gears, pulleys, levers, cams and linkages • I know how to make a simple lever to lift different weights • I know how to generate design criteria and produce a written record of it • I know how to evaluate my design using a written method • I know how to develop and generate further ideas drawing on my knowledge of Forces in Science • I know how to follow health and safety guidance and apply it to my work.	• I know the importance of eating sustainably, considering affordability as well as variety and healthy options • I know that different fabrics have different properties which make them good for different purposes • I know there are different stitches used for design and joining fabrics efficiently • I know how to design and create a Suffragette sash or square • I know how to effectively evaluate my work and that of my peers • I know how to suggest health and safety guidance and apply it to my work	• I know how to evaluate my ideas and products and can consider the views of others to improve my work • I know and can understand how to apply my understanding of how to strengthen, stiffen and reinforce more complex structures • I know and can understand how to use mechanical systems • I know and can understand electrical systems in the products I design and make • I know how to apply my understanding of computing to program, monitor and control the products I design and make.