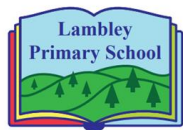
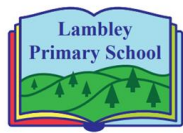


Skills and knowledge progression: DT

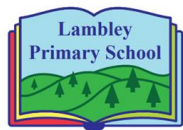
	Cooking and Nutrition			
	Design	Make	Evaluate	Technical Knowledge
Willow (EYFS)	<ul style="list-style-type: none"> Consider patterns for their fruit kebab. 	<ul style="list-style-type: none"> With support, chopping fruit and vegetables safely to make a kebab With support, helping to weigh ingredients and follow instructions to make a gingerbread man. 	<ul style="list-style-type: none"> Children say whether they have managed to follow the pattern. Children give preferences for fruit when making their kebab. 	<ul style="list-style-type: none"> Understanding the difference between different fruits Safe chopping
Elm (Y1)	<ul style="list-style-type: none"> Design a smoothie carton packaging by-hand 	<ul style="list-style-type: none"> Chopping fruit and vegetables safely to make a smoothie Identifying if a food is a fruit or a vegetable Learning where and how fruits and vegetables grow 	<ul style="list-style-type: none"> Tasting and evaluating different food combinations Describing appearance, smell and taste Suggesting information to be included on packaging 	<ul style="list-style-type: none"> Understanding the difference between fruits and vegetables To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber) To know that a blender is a machine which mixes ingredients together into a smooth liquid To know that a fruit has seeds and a vegetable does not To know that fruits grow on trees or vines To know that vegetables can grow either above or below ground To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber)
Birch (Y2)	<ul style="list-style-type: none"> Designing a healthy wrap based on a food combination which work well together 	<ul style="list-style-type: none"> Slicing food safely using the bridge or claw grip Constructing a wrap that meets a design brief 	<ul style="list-style-type: none"> Describing the taste, texture and smell of fruit and vegetables Taste testing food combinations and final products Describing the information that should be included on a label Evaluating which grip was most effective 	<ul style="list-style-type: none"> To know that 'diet' means the food and drink that a person or animal usually eats To understand what makes a balanced diet To know where to find the nutritional information on packaging To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar To understand that I should eat a range of different foods from each food group, and roughly how much of each food group To know that nutrients are substances in food that all living things need to make energy, grow and develop To know that 'ingredients' means the items in a mixture or recipe To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'
Maple (Y3)	<ul style="list-style-type: none"> Creating a healthy and nutritious recipe for a savoury tart using seasonal 	<ul style="list-style-type: none"> Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination 	<ul style="list-style-type: none"> Establishing and using design criteria to help test and review dishes 	<ul style="list-style-type: none"> To know that not all fruits and vegetables can be grown in the UK To know that climate affects food growth



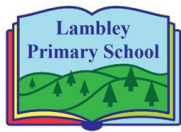
	ingredients, considering the taste, texture, smell and appearance of the dish	<ul style="list-style-type: none"> Following the instructions within a recipe 	<ul style="list-style-type: none"> Describing the benefits of seasonal fruits and vegetables and the impact on the environment Suggesting points for improvement when making a seasonal tart 	<ul style="list-style-type: none"> To know that vegetables and fruit grow in certain seasons To know that cooking instructions are known as a 'recipe' To know that imported food is food which has been brought into the country To know that exported food is food which has been sent to another country. To understand that imported foods travel from far away and this can negatively impact the environment To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health To know safety rules for using, storing and cleaning a knife safely To know that similar coloured fruits and vegetables often have similar nutritional benefits
Pine (Y4)				
Beech (Y5)				
Oak (Y6)	Writing a recipe, explaining the key steps, method and ingredients Including facts and drawings from research undertaken	Following a recipe, including using the correct quantities of each ingredient Adapting a recipe based on research Working to a given timescale Working safely and hygienically with independence	Evaluating a recipe, considering: taste, smell, texture and origin of the food group Taste testing and scoring final products Suggesting and writing up points of improvements in productions Evaluating health and safety in production to minimise cross contamination	To know that 'flavour' is how a food or drink tastes To know that many countries have 'national dishes' which are recipes associated with that country To know that 'processed food' means food that has been put through multiple changes in a factory To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork)



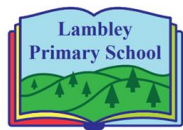
	Mechanisms			
	Design	Make	Evaluate	Technical Knowledge
Willow (EYFS)	<ul style="list-style-type: none"> I can use various construction materials. I can begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. I can join construction pieces together to build and balance. 			
Elm (Y1)				
Birch (Y2)	<ul style="list-style-type: none"> Selecting a suitable linkage system to produce the desired motions Designing a wheel Selecting appropriate materials based on their properties Creating a class design criteria for a moving monster Designing a moving monster for a specific audience in accordance with a design criteria 	<ul style="list-style-type: none"> Selecting materials according to their characteristics Following a design brief Making linkages using card for levers and split pins for pivots Experimenting with linkages adjusting the widths, lengths and thicknesses of card used Cutting and assembling components neatly 	<ul style="list-style-type: none"> Evaluating different designs Testing and adapting a design Evaluating own designs against design criteria Using peer feedback to modify a final design 	<ul style="list-style-type: none"> To know that different materials have different properties and are therefore suitable for different uses To know that mechanisms are a collection of moving parts that work together as a machine to produce movement To know that there is always an input and output in a mechanism To know that an input is the energy that is used to start something working To know that an output is the movement that happens as a result of the input To know that a lever is something that turns on a pivot To know that a linkage mechanism is made up of a series of levers
Maple (Y3)	<ul style="list-style-type: none"> Designing a toy which uses a pneumatic system Developing design criteria from a design brief Generating ideas using thumbnail sketches and exploded diagrams Learning that different types of drawings are used in design to explain ideas clearly 	<ul style="list-style-type: none"> Creating a pneumatic system to create a desired motion Building secure housing for a pneumatic system Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy Selecting materials due to their functional and aesthetic characteristics Manipulating materials to create different effects by cutting, creasing, folding, weaving 	<ul style="list-style-type: none"> Using the views of others to improve designs Testing and modifying the outcome, suggesting improvements Understanding the purpose of exploded-diagrams through the eyes of a designer and their client 	<ul style="list-style-type: none"> To understand how pneumatic systems work To understand that pneumatic systems can be used as part of a mechanism To know that pneumatic systems operate by drawing in, releasing and compressing air
Pine (Y4)				
Beech (Y5)				
Oak (Y6)	<ul style="list-style-type: none"> Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement Understanding how linkages change the direction of a force Making things move at the same time Understanding and drawing cross-sectional diagrams to show the inner-working 	<ul style="list-style-type: none"> Measuring, marking and checking the accuracy of the jelutong and dowel pieces required Measuring, marking and cutting components accurately using a ruler and scissors Assembling components accurately to make a stable frame Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set 	<ul style="list-style-type: none"> Evaluating the work of others and receiving feedback on own work Applying points of improvements Describing changes they would make/do if they were to do the project again 	<ul style="list-style-type: none"> To understand that the mechanism in an automata uses a system of cams, axles and followers To understand that different shaped cams produce different outputs



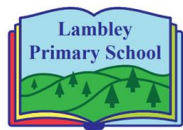
	Structures			
	Design	Make	Evaluate	Technical Knowledge
Willow (EYFS)	<ul style="list-style-type: none"> I can use various construction materials. I can begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. I can join construction pieces together to build and balance. I can use available resources to create props to support role-play. 			
Elm (Y1)	<ul style="list-style-type: none"> Learning the importance of a clear design criteria Including individual preferences and requirements in a design 	<ul style="list-style-type: none"> Making stable structures from card, tape and glue Following instructions to cut and assemble the supporting structure of a windmill Making functioning turbines and axles which are assembled into a main supporting structure Learning how to turn 2D nets into 3D structures 	<ul style="list-style-type: none"> Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't Suggest points for improvements 	<ul style="list-style-type: none"> To understand that the shape of materials can be changed to improve the strength and stiffness of structures To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) To understand that axles are used in structures and mechanisms to make parts turn in a circle To begin to understand that different structures are used for different purposes To know that a structure is something that has been made and put together
Birch (Y2)	<ul style="list-style-type: none"> Generating and communicating ideas using sketching and modelling Learning about different types of structures, found in the natural world and in everyday objects 	<ul style="list-style-type: none"> Making a structure according to design criteria Creating joints and structures from paper/card and tape Building a strong and stiff structure by folding paper 	<ul style="list-style-type: none"> Exploring the features of structures Comparing the stability of different shapes Testing the strength of own structures Identifying the weakest part of a structure Evaluating the strength, stiffness and stability of own structure 	<ul style="list-style-type: none"> To know that shapes and structures with wide, flat bases or legs are the most stable To understand that the shape of a structure affects its strength To know that materials can be manipulated to improve strength and stiffness To know that a structure is something which has been formed or made from parts To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move To know that a 'strong' structure is one which does not break easily To know that a 'stiff' structure or material is one which does not bend easily
Maple (Y3)				
Pine (Y4)				
Beech (Y5)	<ul style="list-style-type: none"> Designing a stable structure that is able to support weight Creating frame structure with focus on triangulation 	<ul style="list-style-type: none"> Making a range of different shaped beam bridges Using triangles to create truss bridges that span a given distance and supports a load Building a wooden bridge structure Independently measuring and marking wood accurately Selecting appropriate tools and equipment for particular tasks Using the correct techniques to saws safely Identifying where a structure needs reinforcement and using card corners for support Explaining why selecting appropriating materials is an important part of the design process 	<ul style="list-style-type: none"> Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary Suggesting points for improvements for own bridges and those designed by others 	<ul style="list-style-type: none"> To understand some different ways to reinforce structures To understand how triangles can be used to reinforce bridges To know that properties are words that describe the form and function of materials To understand why material selection is important based on their properties To understand the material (functional and aesthetic) properties of wood
Oak (Y6)				



	Textiles			
	Design	Make	Evaluate	Technical Knowledge
Willow (EYFS)	<ul style="list-style-type: none"> I can use various materials. I can use available resources to create props to support role-play. 			
Elm (Y1)	<ul style="list-style-type: none"> Using a template to create a design for a puppet 	<ul style="list-style-type: none"> Cutting fabric neatly with scissors Using joining methods to decorate a puppet Sequencing steps for construction 	<ul style="list-style-type: none"> Reflecting on a finished product, explaining likes and dislikes 	<ul style="list-style-type: none"> To know that 'joining technique' means connecting two pieces of material together To know that there are various temporary methods of joining fabric by using staples, glue or pins To understand that different techniques for joining materials can be used for different purposes To understand that a template (or fabric pattern) is used to cut out the same shape multiple times To know that drawing a design idea is useful to see how an idea will look
Birch (Y2)				
Maple (Y3)				
Pine (Y4)	<ul style="list-style-type: none"> Writing design criteria for a product, articulating decisions made Designing a personalised book sleeve 	<ul style="list-style-type: none"> Making and testing a paper template with accuracy and in keeping with the design criteria Measuring, marking and cutting fabric using a paper template Selecting a stitch style to join fabric, working neatly sewing small neat stitches Incorporating fastening to a design 	<ul style="list-style-type: none"> Testing and evaluating an end product against the original design criteria Deciding how many of the criteria should be met for the product to be considered successful Suggesting modifications for improvement Articulating the advantages and disadvantages of different fastening types 	<ul style="list-style-type: none"> To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro To know that different fastening types are useful for different purposes To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions
Beech (Y5)				
Oak (Y6)	<ul style="list-style-type: none"> Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme Annotating designs 	<ul style="list-style-type: none"> Using a template when pinning panels onto fabric Marking and cutting fabric accurately, in accordance with a design Sewing a strong running stitch, making small, neat stitches and following the edge Tying strong knots Decorating a waistcoat -attaching objects using thread and adding a secure fastening Learning different decorative stitches Sewing accurately with even regularity of stitches 	<ul style="list-style-type: none"> Evaluating work continually as it is created 	<ul style="list-style-type: none"> To understand that it is important to design clothing with the client/ target customer in mind To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric To understand the importance of consistently sized stitches



	Electrical Systems (KS2)			
	Design	Make	Evaluate	Technical Knowledge
Maple (Y3)	<ul style="list-style-type: none"> Carry out research based on a given topic (e.g. The Romans) to develop a range of initial ideas Generate a final design for the electric poster with consideration to the client's needs and design criteria Design an electric poster that fits the requirements of a given brief Plan the positioning of the bulb (circuit component) and its purpose 	<ul style="list-style-type: none"> Create a final design for the electric poster Mount the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear Measure and mark materials out using a template or ruler Fit an electrical component (bulb) Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge) 	<ul style="list-style-type: none"> Learning to give and accept constructive feedback on own work and the work of others Testing the success of initial ideas against the design criteria and justifying opinions Revisiting the requirements of the client to review developing design ideas and check that they fulfil their needs 	<ul style="list-style-type: none"> To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit To understand common features of an electric product (switch, battery or plug, dials, buttons etc.) To list examples of common electric products (kettle, remote control etc.) To understand that an electric product uses an electrical system to work (function) To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits
Pine (Y4)	<ul style="list-style-type: none"> Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas 	<ul style="list-style-type: none"> Making a torch with a working electrical circuit and switch Using appropriate equipment to cut and attach materials Assembling a torch according to the design and success criteria 	<ul style="list-style-type: none"> Evaluating electrical products Testing and evaluating the success of a final product and taking inspiration from the work of others 	<ul style="list-style-type: none"> To understand that electrical conductors are materials which electricity can pass through To understand that electrical insulators are materials which electricity cannot pass through To know that a battery contains stored electricity that can be used to power products To know that an electrical circuit must be complete for electricity to flow To know that a switch can be used to complete and break an electrical circuit
Beech (Y5)	<ul style="list-style-type: none"> Designing an electronic greetings card with a copper track circuit and components Creating a labelled circuit diagram showing positive and negative parts in relation to the LED and the battery Writing design criteria for an electronic greeting card Compiling a moodboard relevant to my chosen theme, purpose and recipient 	<ul style="list-style-type: none"> Making a functional series circuit Creating an electronics greeting card, referring to a design criteria Mapping out where different components of the circuit will go 	<ul style="list-style-type: none"> Evaluating a peer's product against design criteria and suggesting modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of circuit component Stating what Sir Rowland Hill invented and why it was important for greeting cards Analysing and evaluating a range of existing greeting cards 	<ul style="list-style-type: none"> To know the key components used to create a functioning circuit To know that copper is a conductor and can be used as part of a circuit To understand that breaks in a circuit will stop it from working To understand that a series circuit only has one path for the electrical current to flow from positive to negative To know that we use symbols to represent components in a circuit diagram To know the names of the components in a basic series circuit: crocodile wires, LED (light-emitting diode), battery holder, battery, cell
Oak (Y6)				



	Digital World (KS2)			
	Design	Make	Evaluate	Technical Knowledge
Maple (Y3)				
Pine (Y4)	<ul style="list-style-type: none"> • Writing design criteria for a programmed timer (Micro:bit) • Exploring different mindfulness strategies • Applying the results of my research to further inform my design criteria • Developing a prototype case for my mindful moment timer • Using and manipulating shapes and clipart, using computer-aided design (CAD), to produce a logo • Following a list of design requirements 	<ul style="list-style-type: none"> • Developing a prototype case for my mindful moment timer • Creating a 3D structure using a net • Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of seconds/minutes upon button press 	<ul style="list-style-type: none"> • Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages • Evaluating my micro:bit program against points on my design criteria and amending them to include any changes I made • Documenting and evaluating my project • Understanding what a logo is and why they are important in the world of design and business • Testing my program for bugs (errors in the code) • Finding and fixing the bugs (debug) in my code 	<ul style="list-style-type: none"> • To understand what variables are in programming • To know some of the features of a Micro:bit • To know that an algorithm is a set of instructions to be followed by the computer • To know that it is important to check my code for errors (bugs) • To know that a simulator can be used as a way of checking your code works before installing it onto an electronic device
Beech (Y5)	<ul style="list-style-type: none"> • Researching (books, internet) for a particular (user's) animal's needs • Developing design criteria based on research • Generating multiple housing ideas using building bricks • Understanding what a virtual model is and the pros and cons of traditional and CAD modelling • Placing and manoeuvring 3D objects, using CAD • Changing the properties of, or combine one or more 3D objects, using CAD 	<ul style="list-style-type: none"> • Understanding the functional and aesthetic properties of plastics • Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range 	<ul style="list-style-type: none"> • Stating an event or fact from the last 100 years of plastic history • Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices • Explaining key functions in my program (audible alert, visuals) • Explaining how my product would be useful for an animal carer including programmed features 	<ul style="list-style-type: none"> • To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose • To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met
Oak (Y6)				