Castercliff Primary Academy – DT Progression Yr6.

22/23 Yr 5 23/24	**Mechanisms** CAMs, making toys	**Electrical Systems** Monitoring Devices- 3D CAD	**Food** What could be healthier? Farm to Fork
D&T Skills	<u>Design</u> To use research to develop design criteria centred in the design brief. Create a detailed design with at least two moving parts. Create an exploded diagram to show my design clearly. <u>Make</u> Cut materials with precision to the nearest mm and refine the finish with appropriate tools (such as sanding wood after cutting). Make a model which is accurate, functions well and is a quality finish. <u>Evaluate</u> Continually evaluate their work as it develops and at the end against design criteria and the design brief.	<u>Design</u> Designing a monitoring device on CAD software. Identifying and naming the components required. Generating ideas through sketching and discussion. Modelling ideas through prototypes (virtual or real). <u>Make</u> Accurately cutting, folding and assembling a net. Making and testing a circuit. Incorporating a circuit into a product. <u>Evaluate</u> Testing own and others finished products, identifying what went well and making suggestions for improvements.	<u>Design</u> Adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. Write an amended method for a recipe to incorporate the relevant changes to ingredients. Designing appealing packaging to reflect a recipe. <u>Make</u> Cutting and preparing recipes safely. Using equipment safely, including knives, hot pans and hobs. Knowing how to avoid cross-contamination. Following a step-by-step method carefully to make a recipe. <u>Evaluate</u> Continually evaluate their work as it develops and at the end against design criteria and the design brief.
Context and User	Smith's Toy Store Children are in need of some interactive, moving toys that take them away from screens. They need to be made from wood so they are more sustainable.	RSPCA The charity have so many animals to care for and need your help to program a smart thermometer that will support animal care and alert their owners when the temperature is not optimal.	Dolmio UK Dolmio have recently been told that they need to create healthier bolognaise recipes that still appeal to children.
D&T Sticky Knowledge	To know that a cam mechanism has two main parts:	To know that a 'device' means equipment created for a certain purpose or job and that monitoring	To understand where meat comes from – learning that beef is from cattle and how beef is

	- a cam - attached to a crankshaft, which rotates - a follower - touches the cam and follows the shape, moving up and down To know that Cams can be produced in any shape, but the most common shapes are, pear, snail and circular.	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 in programming are a set of rules which are followed if certain conditions are met.	reared and processed, including key welfare issues. To know that I can adapt a recipe to make it healthier by substituting ingredients. To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.
Key Vocabulary	Accurate, assembly-diagram, automata, axle, bench hook, cam, clamp, component, diagram, dowel, drill bits, exploded-diagram, finish, frame, function, hand drill, linkage, mark out, measure, mechanism, model, research, right-angle, set square, tenon saw	monitoring device, electronic sensor, thermometer, research, design brief, design criteria, development, programming loop, programming comment, alert, ambient, duplicate, copy, value, variable, model, sustainability, man-made, synthetic	Beef, reared, processed, ethical, diet, ingredients, supermarket, farm, balanced
Aspirations	Designer Engineer Mechanic	Electrician Engineer Designer	Chef TV Chef Social Media Chef Nutritionist Dietician Food Scientist

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Yr 6 From 23/24	Fairground Application of skills including mechanisms, CAD and electrical systems.	Food Come Dine With Me Application of food technology skills.
D&T Skills	<u>Design</u> To use CAD to design a fairground showcasing my knowledge of mechanisms and electrical systems. To use research to develop design criteria centred in the design brief. <u>Make</u> Make and use simple series circuits. Understand and use mechanical systems, e.g. pulleys, shafts and bearings. Design and build purposeful, functional appealing products. <u>Evaluate</u> Continually evaluate their work as it develops and at the end against design criteria and the design brief.	<u>Design</u> Writing a recipe, explaining the key steps, method and ingredients Including facts and drawings from research undertaken <u>Make</u> Following own 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 <u>Evaluate</u> Evaluating a recipe, considering: taste, smell, texture and origin of the food group Taste testing and scoring products Suggesting and writing up points of improvements in productions Evaluating health and safety in production to minimise cross contamination
Context and User	Blackpool Pleasure Beach Your local theme park wants to attract more visitors by including some rotating fairground rides. They have asked you to design and build some working examples to help select the new rides.	Come Dine With Me Competition Each dish prepared will be scored out of five by two testers from outside the group. The scores for each dish will be added together, and at the end of the topic, the group with the highest overall score will be named the 'Come dine with me' winners.
D&T Sticky Knowledge	To know that a pulley needs to be a tight fit so that when the pulley is driven the rod turns. To know that a fairground ride with a larger pulley rotates more slowly. To be able to explain the difference between a conductor and an insulator. To know that circuit cake be used inside structures to create moving objects. To know that a mechanism is the parts of an object that move together, using forces to create outputs.	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 understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).

Key Vocabulary	Pulley, drive belt, shaft, bearing, series circuit, short circuit, hacksaw, vice, sandpaper, glue gun, scissors, pencil, ruler, protractor, pair of compasses.	Equipment, flavours, ingredients, method, research, recipe
Aspirations	Designer Engineer Mechanic Electrician Engineer Mechanical Engineer	Chef TV Chef Social Media Chef Nutritionist Dietician Food Scientist