

Design Technology Key Learning Grid – Year 6

	Autumn	Spring	Summer
	Year 6 NC objectives	Year 6 NC objectives	Year 6 NC objectives
DT– Year 6	NC Statement <u>Design</u> ♣ 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 <u>Make</u> ♣ 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 <u>Evaluate</u> ♣ 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 <u>Technical knowledge</u> ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and apply the principles of a healthy and varied diet	NC Statement <u>Design</u> ♣ 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 <u>Make</u> ♣ 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 <u>Evaluate</u> ♣ 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 <u>Technical knowledge</u> ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	NC Statement <u>Design</u> ♣ 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 <u>Make</u> ♣ 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 <u>Evaluate</u> ♣ 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. <u>Technical knowledge</u> ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

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	♣ 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.	♣ apply their understanding of computing to program, monitor and control their products.	♣ apply their understanding of computing to program, monitor and control their products.
	Year 6 ‘Key Learning’	Year 6 ‘Key Learning’	Year 6 ‘Key Learning’
	<u>Cooking and nutrition</u> <u>Preparing a meal, using complimentary flavours</u> <u>Design</u> • Write a recipe, explaining the key steps, method and ingredients. • Include facts and drawings from research undertaken. <u>Make</u> • Follow a recipe, including using the correct quantities of each ingredient. • Adapt a recipe based on research. • Work to a given timescale. • Work safely and hygienically with independence. <u>Evaluate</u> • Evaluate a recipe, considering: taste, smell, texture and origin of the food group. • Taste testing and scoring final products. • Suggest and write up points of improvements in productions. • Evaluate health and safety in production to minimise cross contamination <u>Knowledge</u>	<u>Digital world</u> <u>Navigating the world</u> <u>Design</u> • Write a design brief from information submitted by a client. • Develop design criteria to fulfil the client’s request. • Consider and suggest additional functions for my navigation tool. • Develop a product idea through annotated sketches. • Place and manoeuvre 3D objects, using CAD. • Change the properties of, or combining one or more 3D objects, using CAD. <u>Make</u> • Consider materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). • Explain material choices and why they were chosen as part of a product concept. • Program an N,E, S, W cardinal compass. <u>Evaluate</u> • Explain how my program fits the design criteria and how it would be useful as part of a navigation tool.	<u>Electrical systems</u> <u>Doodlers</u> <u>Design</u> • Identify factors that could be changed on existing products and explain how these would alter the form and function of the product. • Develop design criteria based on findings from investigating existing products. • Develop design criteria that clarifies the target user. <u>Make</u> • Alter a product’s form and function by tinkering with its configuration. • Make a functional series circuit, incorporating a motor. • Construct a product with consideration for the design criteria. • Break down the construction process into steps so that others can make the product. <u>Evaluate</u> • Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses.

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	• 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).	• Develop an awareness of sustainable design. • Identify key industries that utilise 3D CAD modelling and explaining why. • Describe how the product concept fits the client's request and how it will benefit the customers. • Explain the key functions in my program, including any additions. • Explain how my program fits the design criteria and how it would be useful as part of a navigation tool. • Explain the key functions and features of my navigation tool to the client as part of a product concept pitch. • Demonstrate a functional program as part of a product concept pitch. <u>Knowledge</u> • 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.	• Determine which parts of a product affect its function and which parts affect its form. • Analyse whether changes in configuration positively or negatively affect an existing product. • Peer evaluate a set of instructions to build a product. <u>Knowledge</u> • To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function.
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Vocabulary	balance, bitter, complement, cross-contamination, enhance, equipment, farm to fork, flavours, ingredients, method, pairing, preparation, recipe, salty, sour, sweet, umami	application (apps), biodegradable, Boolean, cardinal compass, corrode, design brief, duplicate, GPS tracker, loop, mouldable, navigation, program, smart phone, sustainable design. model, CAD (computer aided design), invest,	circuit component, configuration, current, develop, DIY, investigate, motor, motorised, problem solve, product analysis, series circuit, stable, target user
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