Mendell Primary School

Aspire Challenge Achieve

Curriculum Progression Document - Design and Technology

KS1 Design & Technology National Curriculum	KS2 Design & Technology National Curriculum
Pupils should be taught to: Design - 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, mock-ups and, where appropriate, information and communication technology Make - 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 - explore and evaluate a range of existing products - evaluate their ideas and products against design criteria Technical knowledge - 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. Cooking and Nutrition - use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from.	Pupils should be taught to: Design - 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 Make - 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 Evaluate - 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 Technical knowledge - 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] - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] - apply their understanding of computing to program, monitor and control their products. Cooking and Nutrition - 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.

	F1	F2	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Design	Use words to convey what they want to make.	Use words and drawings to convey what they want to design/make.	Use pictures and words to convey what they want to design/make. Select pictures to help develop ideas. Use mock-ups e.g. recycled material trial models to try out their ideas.	Propose more than one idea for their product. Use ICT to communicate ideas. Use drawings to record ideas as they are developed. Add notes to drawings to help explanations.	Develop more than one design or adaptation of an initial design. Plan a sequence of actions to make a product. Think ahead about the order of their work. Propose realistic suggestions as to how they can achieve their design ideas.	Record the plan by drawing using annotated sketches. Use prototypes to develop and share ideas. Consider aesthetic qualities of materials chosen. Use CAD where appropriate.	Record ideas using annotated diagrams. Use models, kits and drawings to help formulate design ideas. Sketch and model alternative ideas. Decide which design idea to develop.	Plan the sequence of work. Devise step by step plans which can be read/followed by someone else. Use exploded diagrams and cross-sectional diagrams to communicate ideas.	*We are currently working with our most local secondary school and will add Year 7 to our progression map shortly*
Make	Select materials from a limited range.	Select materials from a limited range.	Select materials from a limited range.	Discuss their work as it progresses.	Select from a range of tools for cutting, shaping, joining and finishing.	Prepare pattern pieces as templates for their design.	Select from, accurately and safely use a wide range of tools.	Make prototypes. Use researched information to inform decisions.	

	Use trial and error to learn the process of making models.	Explain what they are making. Use simple tools to support making models. Use a range of building and recycled materials to try out their ideas.	Explain what they are making. Name the tools they are using.	Select and name the tools needed to work the materials. Explain which materials they are using and why.	Use tools with accuracy. Select from materials according to their functional properties. Use appropriate finishing techniques.	Select techniques for different parts of the process.	Cut accurately and safely to a marked line.	Produce detailed lists of ingredients / components / materials and tools. Refine their product – review and rework/improve.	
Evaluate	Identify when a product they have made is finished and talk about it.	Say what they like and do not like about items they have made. Talk about what went well and what they would do differently next time to make it even better.	Explore existing products and investigate how they have been made (including teacher-made examples). Talk about their design as they develop and identify good and bad points. Say what they like and do not like about items they have made and say why.	Decide how existing products do/do not achieve their purpose. Discuss how closely their finished product meets their own design criteria.	Investigate similar products to the one to be made to give starting points for a design. Research needs of user. Decide which design idea to develop. Consider how the finished product could be improved. Discuss how well the finished product meets the user's design criteria. Investigate key events in design and technology.	Draw/sketch existing products in order to analyse and understand how products are made. Identify the strengths and weaknesses of their design ideas in relation to purpose/user. Consider and explain how the finished product could be improved. Investigate key individuals in design and technology.	Research and evaluate existing products. Consider user and purpose. Consider and explain how the finished product could be improved related to design criteria. Investigate key events and individuals in design and technology.	Identify the strengths and weaknesses of their design ideas. Report using correct technical vocabulary. Discuss how well the finished product meets the design criteria having tested on/ discussed outcomes with the user. Understand how key people have influenced design in a variety of contexts.	
Technical Knowledge	Investigate using a range of materials and their uses in making different models.	Investigate how to make a simple structure more stable and stiffen some materials.	Show how to stiffen some materials. Know how to make a simple structure more stable. Know some different ways of making things move in a 2-D plane.	Start to use technical vocabulary. Cut out shapes which have been created by drawing round a template. Join materials in a variety of ways. Decorate using a variety of techniques. Attach wheels to a chassis using an axle	Use appropriate technical vocabulary for materials and their properties. Strengthen frames with diagonal struts. Use linkages to make movement larger or more varied.	Understand seam allowance. Prototype a product. Incorporate a circuit into a model. Use electrical systems such as switches bulbs and buzzers. Use linkages to make movement larger or more varied.	Use mechanical systems such as cams. Understand pattern layout with textiles. Sew on buttons and make loops.	Use mechanical systems such as gears and pulleys Use the correct vocabulary appropriate to the project Join materials using appropriate methods. Create 3D textile products using pattern pieces Cut strip wood, dowel, square section wood accurately to 1mm.	

Cooking and Nutrition	Talk about differences between foods. Combine different ingredients, then cooling or heating (cooking) them. Know to wash hands before preparing food.	Notice changes to food as they are prepared, combined, heated or cooled. Knowing to wash hands and clean work surfaces. Know we can get food from plants and animals.	Group familiar food products e.g. fruit and vegetables. Know that fruit grows on trees and bushes. Know how to safely cut and chop food. Know about the need for a variety of foods in a diet. Knowing to wash hands, wash fruits and clean work surfaces before working.	Cut, peel, grate and chop a range of ingredients. Work safely and hygienically and understand why this is necessary. Know about the Eatwell Plate. Understand where food comes from. Know differences between fruit and vegetables. Knowing to wash hands, vegetables and clean work surfaces before and after working.	*Science: Nutrition*	Follow instructions/recipes. Create recipes that are 'healthy'. Begin to understand the food groups on the Eatwell Plate. Knowing to wash hands, tie hair back and clean work surfaces before and after working. Cooking methods: roasting, baking	*Geography: Sow, grow and farm*	Understand and apply the principles of a healthy and varied diet. Know where and how ingredients are reared and caught, grown and processed. Understand seasonality. Choose ingredients to support healthy eating choices when designing their food products. Cooking methods: steam, boil, stew, braise	