

Design Technology - Planning, knowledge and evaluation 2016-17

	End of Y1 Expectations	End of Y2 Expectations	End of Y3 Expectations	End of Y4 Expectations	End of Y5 Expectations	End of Y6 Expectations
Evaluating existing products	Describe how an existing product works.	Investigate a range of existing products against success criteria.	Investigate the design features; identify components and ingredients of existing or familiar products.	Explain how an existing product is useful to the user.	Investigate the design features of an existing product and its components ingredients and relate this to the culture or society that it is designed for.	Explain the form and function of familiar existing products.
Research Craft persons influences	Describe work by professional crafts people and designers. State personal preferences.	Describe similarities and differences between professional craft people and designers.	Compare and contrast great bridge designs explaining design and engineering history.	Describe the work of a favourite fashion designer and justify likes and dislikes.	Research the work of a textile artist identifying techniques and materials used for creating and the aesthetic value.	Research cultural traditions and apply their influences in their own work.
Culture and History	Order products and designs chronologically and explain why they are order in this way.	Describe why a design building or designer is important.	Explain the impact of design or designers and how they have shaped history and the world.	Explain how fashion and fabrics have changed over time, its effect on fashion and the way in which the product has been designed.	Create a time line to sequence how design has developed over time. Relate this to the influence of technology.	Describe how an individual in design and technology has shaped the world.
Designing	Draw a simple labelled picture of a design.	Product detailed labelled drawings or models of products based on design criteria.	Recognise that designs have to reach a range of needs and be fit for purpose. Share ideas through models and labelled sketches and words.	Collect information from a range of sources and use this information to inform design ideas in words. Label sketches, designs and models.	Use a range of sources, making judgements and sharing idea through discussion. Label sketches, cross sectional diagrams and use modelling. Recognise that ideas need to meet a range of needs.	Develop detailed criteria for products aimed at specific individuals. Share ideas through exploded diagrams, prototypes, cross sections and pattern pieces.
ICT Usage	Use an ICT package to create a similar design for a product.	Use an ICT package to create a labelled plan or design.	Use ICT packages to create a labelled plan or design in detail.	Use ICT packages to create alternatives for an original design.	Use a CAM and CAD packages to suggest alternative design ideas and explain their ideas and intentions.	Use CAM and CAD packages to design moving parts of a design.
Planning	With support put ideas into practice.	Think of ideas and plan what to do next, based on working with a range of materials and components.	Make realistic plans; identify the process, planning materials and equipment needed.	Make convincing step by step plans, reflecting on design as the product develops.	Work from own details plan, modify and adapt as needed.	Check work as it develops, adjusting and modify approach in the light of progress.
Evaluation	Talk about their own and others' work based, identifying strengths and areas for improvement.	Explain how finished products meet their design criteria and how to make future improvements.	Suggest improvement to products and describe how to implement them, taking into consideration the views of others.	Identify what has worked well and what could be improved (using evidence and research results).	Test and evaluate products against a specific design brief, make adaptations throughout product development.	Demonstrate modifications made to a product base on ongoing evaluations, by themselves and others.

Design Technology – Making, using and understanding

	End of Y1 Expectations	End of Y2 Expectations	End of Y3 Expectations	End of Y4 Expectations	End of Y5 Expectations	End of Y6 Expectations
Tools usage, Health and Safety	Discuss why they have selected a particular tool for a task.	Use tools safely for cutting and joining materials and components.	Develop accuracy when using a wider range of tools.	Name and select appropriate tools for a task and use them with increased accuracy.	Analyse the potential usage of a range of tools and use with precision.	Select the appropriate tools and explain and justify choices.
	Select and explain choice of materials, with support.	Choose appropriate materials. Suggest ways of manipulating them to achieve a desired outcome.	Plan materials needed for a task and explain why.	Choose from a range of materials using the understanding of their characteristics appropriately.	Combine and select materials appropriate to their usage.	Select the best materials for a task, considering their appropriateness based on their characteristics.
	Explain how to keep safe during practical activity.	Work safely and hygienically (e.g. in construction and cooking activities)	Follow health and safety rules for cooking activities.	Observe health and safety rules when working with materials and substances.	Select, name and use appropriate tools for specific jobs safely.	Demonstrate safety considerations in the usage of products.
	Explain how they would repair simple products.	Explain how to cut, measure, form and shape materials to fix or repair something.	Suggest and use an alternative way of fixing something (if first attempt is not successful).	Describe how a product could be improved, made stronger or more sustainable.	Recycle, repair and mend old clothes/tools and justify why.	Use paint, glue, nail and sand to rejuvenate a damaged, faulty or old object.
Origins of food, nutrition; preparing and cooking food.	Discuss the source for common foods.	Explain where the food they eat comes.	Identify food sources as local or global.	Explain food preservation and how food is sometimes processed to make it more appealing.	Explain that food is seasonal.	Explain how ingredients were grown, reared, caught or processed.
	Begin to identify the main food groups including fruit and vegetables.	Understand the need for a variety of foods in a diet.	Describe a balanced diet.	Explain why we should make healthy eating choices.	Evaluate meals as part of a balanced diet.	Plan a healthy/affordable diet.
	Measure and weigh food items using non-standard measures.	Prepare a range of ingredients by cutting, peeling, grating and chopping a range of ingredients to make dishes.	Use a range of cooking techniques to combine a variety of ingredients.	Prepare and cooking a range of savoury dishes, measuring and weighing ingredients appropriately.	Combine food ingredients appropriately by rubbing in, kneading and mixing.	Weigh and measure using scales. Use a wide range of equipment appropriately.
Cutting, joining and structures; textiles and card making.	Cut, safely and accurately with scissors.	Use a bench hook and hacksaw to cut wood/dowel.	Measure and mark wood/dowel.	Cut internal shapes.	Cut safely and accurately to a marked line.	Use a craft knife, cutting mat and safety ruler with one to one supervision if needed.
	Join appropriately, using glue or tape.	Attach features to a vehicle (e.g. an axle and wheels or a sail and rudder). Join appropriately, with glue and/or tape, for different materials and situations.	Join fabrics using a running stitch.	Use a glue gun with close supervision (one to one).	Use a glue gun with close supervision.	Join materials, using the most appropriate method for the materials or purpose.
	Fold, tear, roll and cut paper and card.	Create simple hinges and pop-ups using card.	Cut slots in card and create nets.	Use more complex pop ups.	Combine materials with temporary or fixed joints.	Combine materials with moving joints.
	Cut out shapes from a range of fabrics and papers.	Join fabrics using running stitch, glue, staples, over sewing and tape.	Create a simple pattern for a design.	Use a simple pattern to create a life-sized item of clothing.	Create a 3-D product using a range of materials and sewing techniques.	Create a 3-D product using a range of materials and sewing techniques.
	Build simple structures.	Improve structures by making them stronger, stiffer and more stable.	Create a shell or frame structure using diagonal struts to strengthen.	Prototype and build frame and shell structures, showing awareness of how to strengthen, stiffen and reinforce.	Build a framework using a range of materials (e.g. wood, card and corrugated plastic) to support mechanisms.	Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.

Mechanisms	Use wheels, axles, levers and sliders.	Create and use wheels and axles, levers and sliders.	Create and use simple gears, pulleys, cams, levers and linkages.	Use pulleys, levers and linkages in their products.	Use cams or gears in their products.	Select the most appropriate mechanical system for a particular purpose.
Electricity	Identify and talk about products that use electricity to make them work.	Create working circuits to light a bulb or work a buzzer.	Build models incorporating circuits with buzzers and bulbs.	Build models incorporating motors.	Build models, incorporating switches to turn on and off.	Design products incorporating the most appropriate electrical systems.
Computing	Input random control instructions to simple devices for an unplanned outcome (e.g. making Roamer move).	Input a sequence of instructions to a device for a planned outcome.	Evaluate their own programme, refine and improve it.	Create a solution to a problem using a control output device that has a sequence of events that activate it.	Monitor and control more than one output, in response to changes.	Develop, try out and refine sequences of instructions to effectively monitor, measure and control events.

