Design Technology	Year 5	Year 6	Year 7	Year 8
Designing	Understanding contexts, users and purposes	Understanding contexts, users and purposes	Understanding contexts, users and purposes	Understanding contexts, users and purposes
	I recognise my designs have to meet a range of different needs. I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment	I collect and use sources of information. I carry out research, using surveys, interviews, questionnaires and web-based resources. I identify the needs, wants, preferences and values of particular individuals and groups.	Across KS3 pupils should: • take creative risks when making design decisions Year 7 - In early KS3 pupils should also: • develop/use detailed design specifications to guide their thinking	Across KS3 pupils should: • take creative risks when making design decisions Year 8 In later KS3 pupils should also: • use/develop design specifications that include a wider range of requirements.
	I can explain how particular parts of my products work	I develop a simple design specification to guide my thinking.	 use research to identify and understand user needs 	 understand how to react to design problems given to them.
	Generating, developing, modelling and	Generating, developing, modelling and	Generating, developing, modelling and communicating ideas	Generating, developing, modelling and communicating ideas
	communicating ideas I generate ideas and recognise what my designs have to do. I have clear ideas when asked and use words, labelled sketches and models to share the details of my designs I share and clarify ideas through discussion I use computer-aided design to develop and communicate my ideas	communicating ideas I generate innovative ideas using information I have collected. I share alternative ideas using words, labelled sketches and models, showing that I am aware of limits. I make design decisions, taking account of constraints such as time, resources and cost.	 Across KS3 pupils should: use specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. take creative risks when making design decisions. combine ideas from a variety of sources. use a variety of approaches, for example biomimicry and user-centred design, to generate creative ideas and avoid stereotypical responses. develop and communicate design ideas using annotated sketches. 	 Across KS3 pupils should: use specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. take creative risks when making design decisions. combine ideas from a variety of sources. use a variety of approaches, for example biomimicry and user-centred design, to generate creative ideas and avoid stereotypical responses. develop and communicate design ideas using annotated sketches.
Making	Planning	Planning	Planning	Planning
	I make realistic plans for achieving my aims. I think ahead about the order of my work so I can make the right decisions.	I take users' views into account and produce step-by-step plans I produce appropriate lists of tools, equipment and materials that I need.	Across KS3 pupils should: • select appropriately from specialist tools, techniques, processes, equipment and machinery, including computer-aided manufacture.	Across KS3 pupils should: • select appropriately from specialist tools, techniques, processes, equipment and machinery, including computer-aided manufacture.

	I explain their choice of tools and equipment in relation to the skills and techniques I will be using I can explain my choice of materials and components according to functional properties and aesthetic qualities	I explain my choice of materials according to functional and aesthetic qualities. Practical skills and techniques I select and work with a range of tools and equipment.	 select appropriately from a wider, more complex range of materials, components and ingredients, taking into account their properties such as water resistance and stiffness. match and select suitable materials considering their fitness for purpose. 	 select appropriately from a wider, more complex range of materials, components and ingredients, taking into account their properties such as water resistance and stiffness. match and select suitable materials considering their fitness for purpose.
	Practical skills and techniques	l accurately measure, mark out, cut and	Practical skills and techniques	Practical skills and techniques
	I choose appropriate tools, equipment, materials, components and techniques. I use tools and equipment with some accuracy to cut and shape materials and to put together components. I follow procedures for health and safety I use a wider range of materials and components including construction materials and kits, mechanical components and electrical components	shape materials and components I accurately assemble, join and combine materials and components. I work with a variety of materials and components with some accuracy, paying attention to quality of finish and to function.	 Across KS3 pupils should: follow procedures for safety and understand the process of risk assessment use a wider, more complex range of materials, components and ingredients, taking into account their properties be able to identify and use an increasing range of tools and equipment. use a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely apply a range of finishing techniques to a broad range of materials including textiles, metals, polymers and woods. make use of specialist equipment to mark out materials use a broad range of material joining techniques including mechanical fastenings, heat processes and adhesive. investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials. 	 Across KS3 pupils should: follow procedures for safety and understand the process of risk assessment use a wider, more complex range of materials, components and ingredients, taking into account their properties be able to identify and use an increasing range of tools and equipment. use a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely apply a range of finishing techniques to a broad range of materials including textiles, metals, polymers and woods. make use of specialist equipment to mark out materials use a broad range of material joining techniques including mechanical fastenings, heat processes and adhesive. investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials.
Evaluating	Own ideas and products	Own ideas and products	Own ideas and existing products	Own ideas and existing products
Evaluating	I recognise what I have done well whilst making and suggest things that I could do better.	I reflect on my designs as I develop, whilst thinking about the way the product will be used.	Across KS3 pupils should: • test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups.	Across KS3 pupils should: • test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups.

	I identify where evaluation has led to improvements. I consider the views of others, including users to make improvements. Existing products I investigate and analyse how well products have been designed and made I investigate why materials have been chosen and what methods of construction have been used I analyse how well products work, achieve their purposes and how well they meet user needs and wants.	 I evaluate my ideas and products against my original design specification. I critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make. Existing products I investigate how much it costs to make products. I analyse how innovative products are and how sustainable their materials are. I investigate what impact products have beyond their intended purpose. I know about inventors, designers, engineers and manufacturers who have developed ground-breaking products. 	 evaluate their products against their original specification and identify ways of improving them. actively involve others in the testing of their products. investigate and analyse products that they are less familiar with using themselves. know about an increasing range of designers, technologists and manufacturers and be able to relate their products to their own designing and making. 	 evaluate their products against their original specification and identify ways of improving them. actively involve others in the testing of their products. investigate and analyse products that they are less familiar with using themselves. know about an increasing range of designers, technologists and manufacturers and be able to relate their products to their own designing and making.
		G		
Technical	Making products work	Making products work	Making products work	Making products work
knowledge	I identify what is working well and what could be improved. I know how to use learning from science and maths to help design and make products that work I know that materials have both functional properties and aesthetic qualities I know the correct technical vocabulary for	I know how to reinforce and strengthen a 3D framework I know how mechanical systems such as cams or pulleys or gears create movement. I know how more complex electrical circuits and components can be used to create functional products I know how to program a computer to	 Across KS3 pupils should: understand the properties of materials and how they need to be suitable for purpose. know how to classify materials by structure e.g. hard words, softwoods, ferrous and non- ferrous, thermoplastic and thermosetting plastics. know about the physical properties of materials e.g. grain, brittleness, flexibility, elasticity, 	 Across KS3 pupils should: understand the properties of materials and how they need to be suitable for purpose. know how to classify materials by structure e.g. hard words, softwoods, ferrous and non- ferrous, thermoplastic and thermosetting plastics. know about the physical properties of materials e.g. grain, brittleness, flexibility, elasticity,

			• know about textile fibre sources e.g. natural	 know about textile fibre sources e.g.
			and synthetic and fabrics e.g. plain and	natural and synthetic and fabrics e.g. plain
			woven	and woven
			 make use of sensors to detect movement. 	 make use of sensors to detect movement.
Demonstrating Greater	Across KS2 pupils should demonstrate:	Across KS2 pupils should demonstrate:	Across KS3 pupils should demonstrate:	Across KS3 pupils should demonstrate:
Depth in DT				
	Ability to draw with excellent presentation	Ability to draw with excellent presentation and	Excellent accuracy and making skills.	Excellent accuracy and making skills.
	and accuracy in 2D and3D	accuracy in 2D and3D		
			That they have worked independently.	That they have worked independently.
	Independent drawing of 2D and 3D	Independent drawing of 2D and 3D drawings		
	drawings		Excellent use of tools, equipment and	Excellent use of tools, equipment and
		That the design specification is fully met and	techniques.	techniques.
	That the design specification is fully met	there is excellent annotation involving technical		
	and there is excellent annotation involving	terminology.	Excellent degree of safe working practice for	Excellent degree of safe working practice
	technical terminology.		self and others.	for self and others.
		Excellent ability to evaluate the effectiveness of		
	Excellent ability to evaluate the	a design idea.	That their final product is accurately	That their final product is accurately
	effectiveness of a design idea.		manufactured and well finished.	manufactured and well finished.
		Excellent accuracy and making skills.	(For example: no scratches. Excellent	(For example: no scratches. Excellent
	Excellent accuracy and making skills.		accuracy with the marking out and	accuracy with the marking out and
		That they have worked independently.	filing. Edges are polished to a glossy shine.)	filing. Edges are polished to a glossy shine.)
	That they have worked independently.			
		Excellent degree of safe working practice for	Creative, detailed and complex design ideas	Creative, detailed and complex design ideas
	Excellent degree of safe working practice	self and others.		
	for self and others.		Full consideration of the user group and	Full consideration of the user group and
		That their final product is accurately	specification.	specification.
	That their final product is accurately	manufactured and of a high quality.		
	manufactured and of a high quality.		Full understanding of materials.	Full understanding of materials.
			Fully effective evaluation of design ideas.	Fully effective evaluation of design ideas.
			Excellent presentation techniques.	Excellent presentation techniques.
			Complex technical language and written	Complex technical language and written
			communication in the annotation.	communication in the annotation.