

Year 9 Design Technology					
	Embarking	Emerging	Developing	Securing	Mastering
Design	<ul style="list-style-type: none"> Collect information that helps understanding and clarity of problem. Use pictures and words to describe what you want to do. Generate ideas and recognise that your designs have to meet a range of different needs. Generate simplistic ideas by using collected information and use some ideas from others to inform your own work. 	<ul style="list-style-type: none"> Use limited research and exploration to identify and demonstrate limited understanding of user needs. Identify design problems and demonstrate a limited understanding of how to reformulate problems given to them. Develop limited specifications to inform the design of innovative, functional, appealing products that respond to limited needs in a variety of situations. Use a limited variety of approaches, to generate some creative ideas and avoid stereotypical responses. Develop and communicate some design ideas using annotated sketches, detailed plans, 3D and mathematical modelling, oral and digital presentations and computer-based tools. 	<ul style="list-style-type: none"> Use research and exploration to identify and demonstrate some understanding of user needs. Identify their own design problems and demonstrate some understanding of how to reformulate problems given to them. Develop specifications to inform the design of innovative, functional, appealing products that respond to some needs in a variety of situations. Use a variety of approaches, to generate some creative ideas and avoid stereotypical responses. Develop and communicate design ideas using annotated sketches, detailed plans, 3D and mathematical modelling, oral and digital presentations and computer-based tools. 	<ul style="list-style-type: none"> Use good research and exploration to identify and understand user needs. Identify and solve some of their own design problems and demonstrate a good understanding of how to reformulate problems given to them. Develop good specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. Use a good variety of approaches, to generate creative ideas and avoid stereotypical responses. Develop and communicate good design ideas using annotated sketches, detailed plans, 3D and mathematical modelling, oral and digital presentations and computer-based tools. 	<ul style="list-style-type: none"> Use detailed research and exploration to identify and understand user needs. Identify and solve their own design problems and understand how to reformulate problems given to them. Develop detailed specifications to inform the design of innovative, functional, appealing products that respond well to needs in a variety of situations. Use a wide variety of approaches, to generate very creative ideas and avoid stereotypical responses. Develop and effectively communicate detailed design ideas using annotated sketches, detailed plans, 3D and mathematical modelling, oral and digital presentations and computer-based tools.
Make	<ul style="list-style-type: none"> Work with a range of tools, materials, ingredients, equipment, components and processes with some precision. Apply your knowledge of materials, ingredients and components, and work with them with some accuracy, paying attention to quality of finish. 	<ul style="list-style-type: none"> Select from and use tools, techniques, processes, equipment and machinery with accuracy, including computer-based manufacture. Select from and use a wide range of materials, components and ingredients, taking into account a property. 	<ul style="list-style-type: none"> Select from and use specialist tools, techniques, processes, equipment and machinery with some precision, including computer-based manufacture. Select from and use a wide range of materials, components and ingredients, taking into account their properties. 	<ul style="list-style-type: none"> Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-based manufacture. Select from and use a wider complex range of materials, components and ingredients, taking into account their properties. 	<ul style="list-style-type: none"> Independently select from and use specialist tools, techniques, processes, equipment and machinery with consistent precision, including computer-based manufacture. Independently select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

Evaluate	<ul style="list-style-type: none"> Evaluate your products as they are being used, and identify ways of improving them. Test and evaluate your products, showing that you understand the situations in which the products will function. 	<ul style="list-style-type: none"> Explain the work of professionals and others to help their development and evidence of their understanding. Demonstrate an awareness of new technologies. Evaluate and refine their ideas and products against a specification. Explain developments in design and technology, its impact on individuals and society. 	<ul style="list-style-type: none"> Analyse the work of professionals and others to develop and evidence their understanding. Demonstrate an awareness of new and emerging technologies. Evaluate and refine their ideas and products against a specification, taking into account the views of intended users. Demonstrate an awareness of developments in design and technology, its impact on individuals, society and the environment. 	<ul style="list-style-type: none"> Analyse the work of past and present professionals and others to develop and broaden their understanding. Investigate new and emerging technologies. Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists. 	<ul style="list-style-type: none"> Analyse and evaluate the work of past and present professionals and others to develop and broaden their understanding. Investigate and analyse new and emerging technologies. Test, evaluate and refine their ideas and products against a detailed specification, taking into account the views of intended users and other interested groups. Understand and demonstrate developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
Technical knowledge	<ul style="list-style-type: none"> Verbally explain the different properties of at least 3 different materials Show an appreciation of a mechanical system can be used to change speed, direction, or path of movement Demonstrate how an electrical system can be powered and controlled within a product Demonstrate an awareness of how electronics can be programmed respond to inputs giving desired outputs 	<ul style="list-style-type: none"> Demonstrate a good understanding and use the properties of materials and the performance of structural elements to achieve functioning solutions. Demonstrate a good understanding of how more advanced mechanical systems used in their products enable changes to movement and force. Demonstrate a good understanding how more advanced electrical and electronic systems can be powered and used in their products. Apply computing and demonstrate an awareness of the use electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components. 	<ul style="list-style-type: none"> Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. Understand how more advanced mechanical systems used in their products enable changes to movement and force. Understand how more advanced electrical and electronic systems can be powered and used in their products. Apply computing and use electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components. 	<ul style="list-style-type: none"> Fully understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. Fully understand how more advanced mechanical systems used in their products enable changes to movement and force. Fully understand how more advanced electrical and electronic systems can be powered and used in their products. Apply computing, use and explain electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components. 	<ul style="list-style-type: none"> Fully understand, use and explain the properties of materials and the performance of structural elements to achieve functioning solutions. Fully understand and explain how more advanced mechanical systems used in their products enable changes to movement and force. Fully understand and explain how more advanced electrical and electronic systems can be powered and used in their products. Apply computing, use and fully explain electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components.