

Crest Award to be awarded in Year 7 projects

KS3 STEM	Explore (CREST Planning a Project Test, Research & Plan)	Design (CREST Planning a Project Test, Research, Plan, Design)	Manufacture (CREST Throughout the project Make and Record Data)	Evaluate (CREST Finalising the project Success and Limitations)
Mastery	<ul style="list-style-type: none"> <input type="checkbox"/> Expectations Develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values. <input type="checkbox"/> In-depth research of design movements and developments in design technology. 	<ul style="list-style-type: none"> <input type="checkbox"/> Design and make, prototypes in response to issues, needs, problems and opportunities. <input type="checkbox"/> Use imagination, experimentation and combine ideas when designing consider the costs, commercial viability and marketing of products. 	<ul style="list-style-type: none"> <input type="checkbox"/> Demonstrate in practical work knowledge of how the impact of forces and stresses on materials and objects and the ways in which materials can be reinforced and stiffened. <input type="checkbox"/> Specialist techniques and processes used to shape, fabricate, construct and assemble a high quality product. 	<ul style="list-style-type: none"> <input type="checkbox"/> Within evaluation use refined and complex key DT terminology including those related to: designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics.
Secure	<ul style="list-style-type: none"> <input type="checkbox"/> Demonstrate an ability to write a design brief, A specifications from their own and others' considerations of human needs, wants and interests. <input type="checkbox"/> Investigate and analyse the work of past and present professionals and companies in the area of design and technology in order to help inform their own ideas. 	<ul style="list-style-type: none"> <input type="checkbox"/> Use different design strategies, such as collaboration, user centered design and systems thinking, to generate initial design ideas. <input type="checkbox"/> Technical drawing employs both formal and informal technical drawing (thumbnail sketches, cross-sectional, exploded diagrams). <input type="checkbox"/> Options related to a variety of costings explored within designs. 	<ul style="list-style-type: none"> <input type="checkbox"/> Select from and use a wide range of specialist tools, techniques, processes, equipment and machinery precisely. Products have a good quality professional finish. 	<ul style="list-style-type: none"> <input type="checkbox"/> Create own evaluation questions and measurable outcomes. <input type="checkbox"/> Collect data from target audience to aid evaluation. <input type="checkbox"/> Evaluate costs and ascertain whether product is financially viable.
Developing	<ul style="list-style-type: none"> <input type="checkbox"/> Use a variety of research and analysis tools (e.g. mood boards) to explore and develop ideas. Research tailored to a specific target audience. <input type="checkbox"/> A wide range of existing products are used for analysis with a greater focus on method of production and materials used. 	<ul style="list-style-type: none"> <input type="checkbox"/> Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, and computer-based tools. <input type="checkbox"/> Design choices are justified and basic costings discussed. iterative design evident throughout design process. 	<ul style="list-style-type: none"> <input type="checkbox"/> Select from and use a wider, more complex range of materials, components and take into account their properties. <input type="checkbox"/> Use Computer-Aided Manufacture (laser cutter, cricut, 3D printers). <input type="checkbox"/> Use appropriate and accurate marking out methods <input type="checkbox"/> Understand efficient cutting and how to minimize waste. <input type="checkbox"/> Surface finish considered. <input type="checkbox"/> Record Data. 	<ul style="list-style-type: none"> <input type="checkbox"/> Test, evaluate and refine their ideas and products against an in-depth specification, taking into account the views of intended users and other interested groups. <input type="checkbox"/> Manufacturing diaries show evidence of evaluation at each step.
Emerging	<ul style="list-style-type: none"> <input type="checkbox"/> Use product analysis as a tool to explore and annotate existing designs identifying strengths and weaknesses which in turn inform own design process. <input type="checkbox"/> Understand what a target audience is and identify a target audience. <input type="checkbox"/> Use mood boards to explore and develop ideas. <input type="checkbox"/> Planning of project is understood. 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify and solve their own design problems and understand how to reformulate problems given to them. <input type="checkbox"/> Use iterative design to model, evaluate and improve several times during design process by testing Thought process is evident through annotated designs. <input type="checkbox"/> Several themes explored and aimed at particular individuals or groups. <input type="checkbox"/> Planning of project is understood. 	<ul style="list-style-type: none"> <input type="checkbox"/> Experimentation with a variety of techniques, tools and equipment, including Computer Aided Design (Fusion 360). <input type="checkbox"/> Choices for final product are made in relation to design specification, chosen target audience and theme. <input type="checkbox"/> Can select correct tools and explain functions. Manufacturing diaries feature descriptions of techniques, by recording DATA. 	<ul style="list-style-type: none"> <input type="checkbox"/> Use checklists to evaluate progress and final product. <input type="checkbox"/> Consider the views of others and provide constructive criticism through peer review. <input type="checkbox"/> Use feedback from others to make improvements to work.