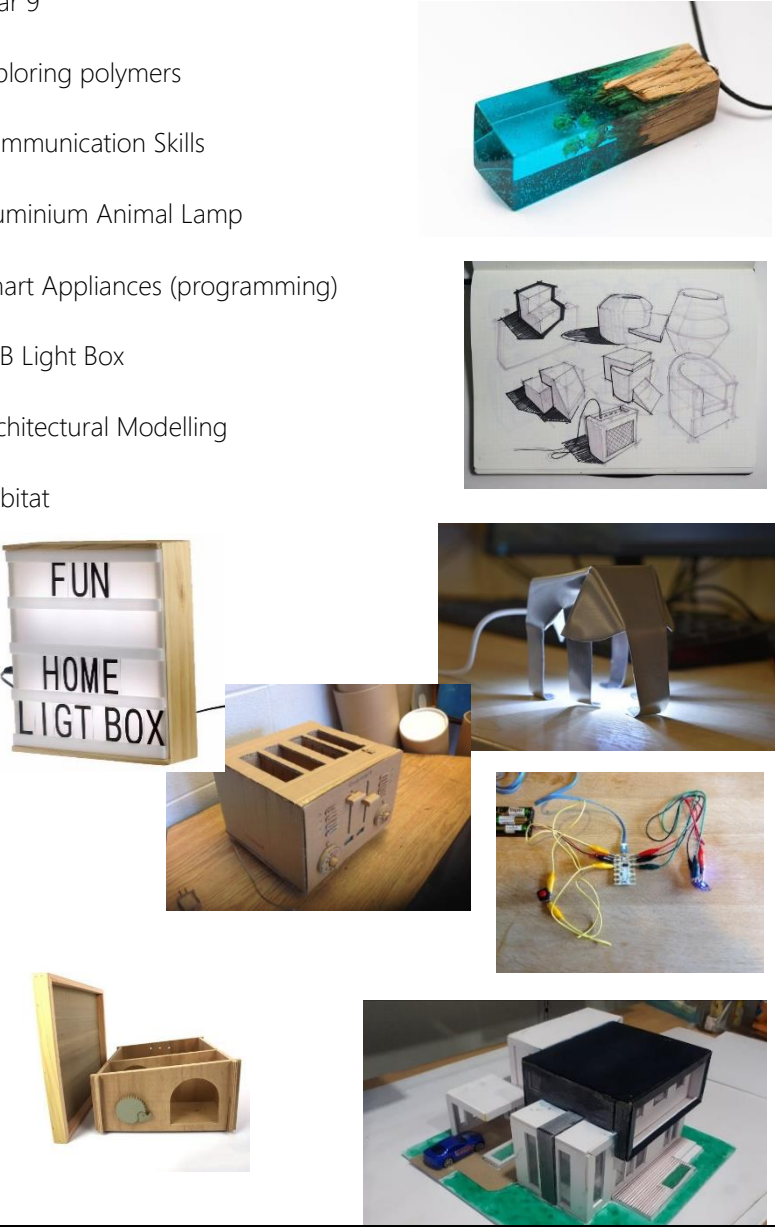
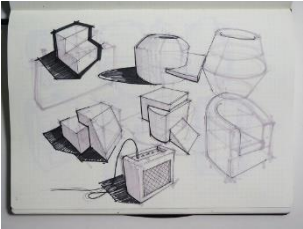
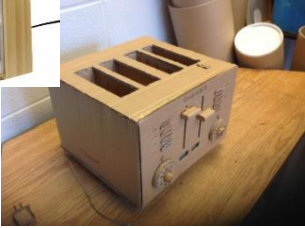
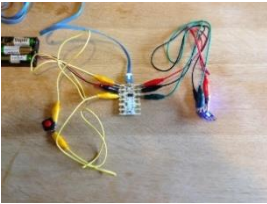
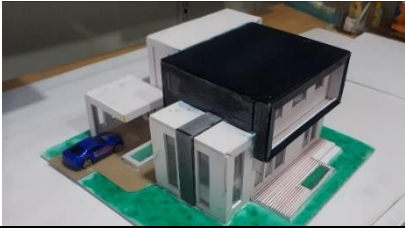


Curriculum Progression – Design and Technology

Key Stage 3 introduces pupils to designing and making for a specific purpose. Pupils develop their knowledge of a wide range of materials, components manufacturing processes in order to create meaningful products. They are introduced to the design process and develop their technical knowledge, for example in Year 7 they learn about how electricity is generated and the advantages and disadvantages of different ways of generating electricity, this relates to their product as it is electrical and also broadens their understanding of environmental issues. Pupils also develop their knowledge of mechanical systems by making a note holder from mixed materials, using tools and equipment that make use of the mechanical systems they have studied, as well as collaboratively designing and building a structure when investigating structural elements. In Year 8, pupils explore the Art Deco movement as it has a distinctive aesthetic that lends itself well to jewellery, they design and make a pewter cast item of jewellery whilst learning about metals and the casting process. They then go on to design and manufacture an organiser for a specific user, this could be a teenager, an elderly person, a dog lover etc., encouraging them to conduct primary research and to use a wider range of materials and employ more manufacturing processes. Year 8 pupils continue to Year 9, the focus is on exposing pupils to a wider range of materials, components and manufacturing processes, building their knowledge for future solutions, as well as developing their knowledge of existing products and the issues surrounding truly user-centred design and considering user’s backgrounds and sensitivities.

KS3		Understanding users, contexts and purpose	Generating, developing, modelling and communicating ideas	Planning	Practical skills and techniques	Own ideas and products	Existing products	Key events and individuals	Making products work
Year 9 Exploring polymers Communication Skills Aluminium Animal Lamp Smart Appliances (programming) USB Light Box Architectural Modelling Habitat 	       	Pupils explore a wide range of contexts when developing a number of different products. They explore the health and wellbeing, cultural, religious and socio-economic contexts of their intended users.	Pupils use specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations Pupils use user-centred design, to generate creative ideas and avoid stereotypical responses. Sketching has progressed to more independent isometric sketching which is fully rendered with detailed annotations. Pupils are able to use 2D and 3D CAD to communicate and model ideas. Pupils are able to simulate programs when using programmable components. Pupils are able to give oral presentations of their ideas.	Pupils are aware of all tools and equipment available to them in order to model and manufacture, including CAD and CAM. Pupils are aware of a wide range of materials and components to create products. Pupils are able to accurately cost the manufacture of a product using spreadsheets. Pupils can articulate their planning and decisions they have made through development.	Pupils begin to choose the most appropriate way to manufacture a product, drawing on their knowledge of tools, equipment joining and finishing.	Pupils are able to select appropriate methods to evaluate their products in use and modify them to improve performance and produce short reports, making suggestions for improvements.	Pupils begin to consider the environment more and the impact that familiar and unfamiliar products have on the planet.	Pupils learn about a wider range of individuals and companies that have had a significant impact on the design industry.	Pupils further explore how inputs like sensors can be used to make intelligent products by using microcontrollers. Pupils are able to control outputs such as motors. Pupils use maths knowledge regularly in design situations. Pupils are able to make adjustments to machinery to change how products are manufactured.