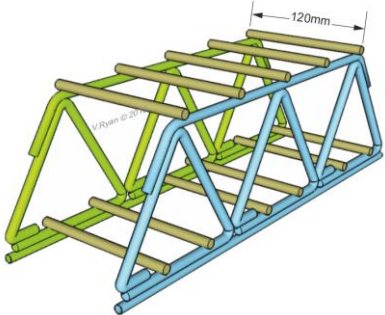


Curriculum Progression – Design and Technology

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 7 USB Adjustable Lamp   Mixed-material note holder  Bridge structure	Pupils explore a range of contexts in which an LED lamp may be used. Pupils explore the needs and wants of a range of different users. Pupils develop their own design brief and specification for a solar lamp. Pupils learn about ergonomics and its importance to potential consumers. Pupils learn about the importance of cultural considerations in design.	Pupils learn how to sketch in isometric using a grid. They begin to annotate key features of the product.	Pupils are able to select appropriate tools and processes to complete a range of tasks.	Pupils are able to use a range of tools and equipment safely such as using saws, a pillar drill and soldering. Pupils learn about how timbers can be joined together. Pupils explore the properties of a limited range of materials.	Pupils are able to test, evaluate and refine their ideas and products against set criteria, taking into account the views of intended users and other interested groups.	Pupils analyse an existing product linked to their project. Pupils explore the use of laser cutting when learning about CAD/CAM and emerging tech. Pupils discover the positive and negative impact that products can have in the wider world.	Pupils research a range of notable figures from the world of design. Some of these are diverse groups. Pupils begin to learn about environmental issues.	Pupils build on their knowledge of electricity and electronics to produce a functioning prototype. Pupils begin to apply their maths knowledge to design situations. Pupils know how woods are classified and learn about their properties. Pupils begin to learn about mechanical systems, particularly levers. They also learn about electronic systems, including the use of inputs and outputs and coding prototype systems. Pupils continue to learn about more advanced mechanical systems through the manufacture of a note holder.

Sequencing Information – Pupils begin by exploring the origins and properties of the three timber types before going on to practical work. They specifically learn about softwoods through practical activities when learning how to use tools and equipment. The complexity of skills builds each lesson, being informed by previous experience, such as measuring and marking being learnt first, then utilised throughout the entire making process. Pupils learn about electricity and electronics before they make their circuit and then learn about electronic systems once their product is complete and functional. Through homework tasks, pupils learn more about the designed world around them, linked to what they are producing in lesson time.