Year	**Specialism 1: Product Design**	**Specialism 2: Textiles**
5	Pupils will know: • How to recognise different types of linkages and levers in mechanism • How to recognise types of motion (linear, reciprocating, oscillating, rotary) • How to use mind-maps to develop concepts • How to use simple 2D sketching to convey ideas • How design products respond to environmental needs • How to work safely in a workshop • How to use and manipulate basic hand tools • How to complete a STAR analysis and simple reflection on the design process Design Context: Litter picker	Pupils will know: • The difference between woven, knitted and non-woven fabrics • How to work to a simple design brief • How to design a product for a chosen market • How to use simple sketching to convey ideas • How to work safely in the textile studio • How to create and cut a simple pattern • How to join fabrics together using simple decorative stitches • How to embellish fabric with simple applique • How to complete a STAR analysis and simple reflection on the design process Design context: Zenki soft toy

Year	**Specialism 1: Product Design**	**Specialism 2: Textiles**
6	Pupils will know: • How to categorise plastics, including thermoplastics and thermoset, and their applications • How to recognise and use component symbols when designing circuits • The features and influence of the Memphis Movement • How to apply elements of the Memphis Movement to our own designs • How to use mood boards to inspire simple designs • How to use oblique sketching • How to use CAD (computer aided design) to create vector-based designs • How to use heat processes (soldering and strip heating) to join, fix and manipulate materials • How to develop formal evaluation against a given criteria Design Context: Illumination – creating a mood light inspired by Ettorre Sottsass	Pupils will know: • How to work from a design brief • How to draw inspiration from geometric prints • How to create a simple repeat pattern using geometric shapes • What is a prototype and how to create one for their product • How to use different hand-stitching techniques, including an even back-stitch • How to apply a simple fastening • How to evaluate against a given criteria Design Context: Design a phone case

Year	**Specialism 1: Product Design**	**Specialism 2: Textiles**
7	Pupils will know: • How to categorise timbers • How the Bauhaus School has influenced designs • How to apply Bauhaus principles to own designs, focussing on colour and geometric shapes • How to use 3D CAD software (SketchUp) • How to use electrical cutting tools safely and independently • How to use isometric sketching • How to create technical drawings to scale • How to use complex hand and machine tools with independence • How to use gather opinions from clients to reflect on designs Product Context: Bauhaus inspired clock to be sold in The Design Museum	Pupils will know: • How to draw inspiration from existing products to create a mood board • How to work from a design brief taking account of design constraints • How to use dyeing methods to colour a fabric • How to mark-up fabric using simple templates • How to design, cut and colour a simple stencil • How to create temporary and permanent joins in fabric using hand and machine sewing • How to attach fastenings • How to use decorative techniques to embellish a design • How to evaluate work, gather opinions from clients and reflect on designs Product Context: Make a decorative cushion cover to a design specification

Year	**Specialism 1: Product Design**	**Specialism 2: Textiles**
8	Pupils will know: • How to categorise metals into ferrous, non-ferrous and alloy metals • How to identify the appropriate metal for design contexts • How designers can have an impact on the environment and the importance of social responsibility • How to design accurate moulds using a vector-based CAD (Techsoft) • How to avoid design fixation by using stimulus in designs • How to use heat processes to mould and cast materials • How to evaluate products effectively using ACCESS FM Product context: Design and make a piece of eco-jewellery	Pupils will know: • How designers and brands collaborate to make products • How to create mood boards to inspire design, based on a design brief and specification • How to create and construct a prototype • How to select materials suitable for the design concept • How to transfer and cut provided patterns • How to use decorative techniques including embroidery and stencilling • How to join complex pattern pieces using fabric adhesive • How to evaluate products using ACCESS FM Product context: Design and make a fabric sports shoe