Product Design

“Creativity is allowing yourself to make mistakes, Design is knowing which ones to keep” - Scott Adams

All Product Design staff will strive to enthuse, facilitate and shape our Byrchall students to be creative problem solvers who are confident, resilient and most importantly passionate about the products they design and make. Students will build on previous experiences and will develop key skills in each specialist area.

- Resistant Materials – Polymers & Boom Box
- New technologies – Microbit and 3D printing
- Textiles – Fabric printing/Art Deco bag

Homework will be set in the following formats to support independent learning in our subject:

- Keywords followed by a spelling test in lesson
- Watching a video to learn a specific skill or to support a research activity
- Reading an article online with regards to product evolution – new materials /processes and products

Practising a particular skill such as:

- Sketching (2D and 3D)
- Producing a working drawing with measurements
- Generating design ideas
- Developing ideas
- Simple card modelling
- CAD (Corel Draw/Google Sketch Up)

Collecting research information such as:

- Measurements to ensure a product is ergonomic
- Imagery/inspiration to help with design tasks
- Customer interviews/feedback to help with evaluation
- Visits to shops to look at existing products
- Finding out about careers related to Product Design
- Investigating possible pathways with local colleges and universities
- Finding out local industries and jobs including apprenticeships

Unit	Duration (lessons)	Learning Objectives/Outcomes
Polymers and Boom Box	8	• Understand how polymers (thermoplastics & thermoforming) are classified and where they come from. • Learn how polymers can be shaped using heat and formers • Demonstrate how to set up and use the line bender & hot press safely • Be able to explain how a vacuum former works. • Be able to explain the environmental impact that polymers are having on our planet • Understand what a passive amplifier is and how it works • Be able to use manufacturing aids to help mark out your work • Be able to select, use hand tools and equipment to shape your work • Learn how to use isometric grid paper to explore your design ideas • Use CAD/CAM to personalise your ideas
Art Deco Bag	8	• Gain knowledge of the Art Deco Design Movement • Be able to create your own Art Deco patterns in your design work. • Be able to refine, develop and improve your design ideas by considering constraints. • Understand how repeat patterns can be used to develop fabric patterns • Be able to create your own printing block to create a repeat pattern • Further develop knowledge of colour theory and develop skills and techniques to create colour dye combinations • Develop techniques in making your own printed pattern fabric

12	Duration (lessons)	Learning Objectives/Outcomes
Microbit and 3D printing	8	• Understand what a microprocessor is and how it works • Be able to give examples of what products use microprocessors. • Lean how to program your own microprocessor using coding • Be able to improve your work through testing and evaluating. • Understand how microprocessors can be programmed to solve more complicated tasks • Be able to explain how 3D printing works and give examples of how it used • Be able to use digital measuring equipment to measure an object • Be able to produce an accurate working drawing • Further develop your evaluation skills using third party feedback.