

Year	Autumn	Spring	Summer
7	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Construction lines • Grid method • Colour, tone and texture • Oblique products • Rendering 	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Health & Safety • CAD/CAM • Timbers • Papers and Boards 	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Packaging • Product Analysis • Design Specification
8	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Isometric Sketching and projection • Render and shading • Colour, tone and texture • Explore a context • Focused research • The work of others • Biomimicry 	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Design ideas • Timbers • Polymers Theory • Sustainability and the 6 R's • Papers and boards • CAD/CAM • Assembly of parts • Test and Evaluate 	<p>Design and Making Skills</p> <ul style="list-style-type: none"> • Health & Safety • Tools & Machinery • Smart Materials • Anthropometrics and Ergonomics • Programming • Modelling • Types of motion • Levers and linkages • Pulleys, cranks, chains and sprockets

			Sustainable Textiles <ul style="list-style-type: none"> • Famous fashion companies • Social and cultural issues • Textiles Theory and modelling
9	Design Skills <ul style="list-style-type: none"> • 3D Drawing techniques • Exploded drawings • Orthographic drawings • Rendering Skills • STEM Challenge Making Skills <ul style="list-style-type: none"> • Exploring a context • Forces and Stresses • Properties and enhancing materials • Structures • Designer collaboration • Modelling 	Design Skills <ul style="list-style-type: none"> • Initial design ideas • Prototyping • Research & exploration • Manufacturing equipment • Design ideas The Work of Others <ul style="list-style-type: none"> • Famous Designers • Design eras • Companies Making Skills <ul style="list-style-type: none"> • Construction of a product • Joining methods • Making out and cutting techniques • Finishing techniques 	Design Skills <ul style="list-style-type: none"> • CAD • Production plan • Manufacturing • Testing & feedback. • STEM Challenge Making Skills <ul style="list-style-type: none"> • CAD CAM Project • Fusion 360 • 2D Design • Laser cutting • 3D printing • Assembly
10- Product Design	Core Principles Design Skills	Focus Design and Making Principles New Materials	Independent Design and Make Project 1 (Teacher Led) <ul style="list-style-type: none"> • Developing design ideas

	<ul style="list-style-type: none"> • 1pt Perspective • 2pt Perspective • Organic forms <p>New and emerging technologies</p> <ul style="list-style-type: none"> • Industry and enterprise • People, culture and society • Materials overview <p>Technical Principles</p> <ul style="list-style-type: none"> • Materials sources and origins • Types and properties • Conversion • Commercial processes • Ecological challenge/6 R's 	<ul style="list-style-type: none"> • Modern materials • Smart materials • Composites <p>Independent Design and Make Project 1 (Teacher Led)</p> <ul style="list-style-type: none"> • Investigating the design context • Producing a design brief and specification • Generating design ideas • Primary and secondary research • Anthropometrics and ergonomic • Product analysis • Communicating design Ideas <p>CAD / modelling techniques / working drawings</p>	<ul style="list-style-type: none"> • Making a prototype • Analysing and evaluating <p>Independent Design and Make Project 2 (NEA)</p> <ul style="list-style-type: none"> • Investigating the design context
10-Engineering	<p>Engineering materials and properties</p> <ul style="list-style-type: none"> • Engineering processes • Engineering components • Comparing materials, processes and components with alternatives. 	<p>Dismantling and assembling engineering products</p> <ul style="list-style-type: none"> • Measuring engineering components • Identifying surface marks and describing signs of wear and degradation. • Describing how components fit together 	<p>Interpreting Engineering brief</p> <ul style="list-style-type: none"> • CAD 3D component • Manufacturing processes • Testing and evaluating

11- Product Design	<p>Independent Design and Make Project 2 (NEA)</p> <ul style="list-style-type: none"> Investigating the design context Producing a design brief and specification Generating design ideas 	<p>Independent Design and Make Project 2 (NEA)</p> <ul style="list-style-type: none"> Developing design ideas Making a prototype Analysing and evaluating 	

Curriculum overview – Design and Technology- Ashington.