

D&T KS3	Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Y7 Discover Students discover the importance of: H&S in the workshop; typography and presentation in graphic projects; selecting materials based on their properties (papers & boards, polymers and timbers). They are introduced to: product analysis and specifications using ACCESS FM; current 2D CAD software (Affinity Designer) & CAM processes (laser cutter; and working with a range of hand tools & equipment.	Paper & boards: Graphics – Typography - Business Card Design a personal business card focusing on typography and illustration Homework 1: Make a poster on the 'Value of Design & Technology and related careers'. Homework 2: Research Google Doodles	Paper & boards: Graphics - Pop-up Card/Calendar using paper engineering Design & make project focusing on graphics, mechanisms and assembly skills Homework 3: Research Pop-up card/calendar ideas/themes and reference images Extension to research designer e.g. Robert Sabuda	Paper & boards: WWF Slot-together animal set Intro to principle of slot-together: 2D shapes to 3D form. Students work in groups to research endangered animals in a given continent. Introduction to CAD & prototyping... Homework 4: Research the work of the WWF and how they are trying to protect endangered animals DATA DROP	Paper & boards: WWF Slot-together animal set and packaging design cont... Design & make card based slot-together animal using modelling & physical testing. Introduction to purpose of packaging and CAM: Use Affinity Designer to create accurate artwork for laser cutting. Extension: Design packaging using Affinity. Homework 5: Research slot-together kits for packaging ideas	Timbers: wooden Block Bot Intro orthographic drawing and types of timbers/properties to make 'Block Bot' wooden robot. Measuring, marking out and use hand tools. Introduction to working with close tolerances, quality control and H&S in a workshop. Homework 6: Research common types of timbers (hard, softwood & manufactured boards) and their uses	Timbers: wooden Block Bot cont... Complete Block Bot, evaluate against the orthographic drawing to check tolerances. Extension: personalise and design packaging using Canva/Affinity Designer Homework 7: Research timber surface treatments/finishes and what they are used for DATA DROP
Y8 Develop Students develop their understanding of the design process and the importance of being able to communicate their design ideas with a focus on freehand drawing and sketching skills using a range of 2D & 3D techniques, 3D modelling skills using physical materials (card) and 3D virtual CAD (TinkerCAD). They learn about mechanisms and develop their knowledge of CAM (3D printing) and rapid prototyping.	Communicating Design ideas: 2D & 3D Sketching Skills Lego themed drawing skills: 3D sketching, orthographic, isometric, perspective and exploded... Homework 1: Research Lego product range for inspiration. Homework 2: Isometric & perspective drawing practice	Communicating Design ideas: 2D & 3D Sketching Skills cont & 3D physical modelling Use of orthographic drawing to make large scale Lego minifigure model using corrugated card in teams. Homework 3: 30 day Sketching Challenge DATA DROP	Communicating Design ideas: 3D virtual CAD modelling Introduction to TinkerCAD and rapid prototyping using 3D printing: students complete a series of tasks to gain knowledge and understanding of 3D modelling tools and processes... Homework 4: Research how 3D printing benefits society	Communicating Design ideas: 3D CAD modelling cont... Students choose challenge based on level of confidence to create own Lego themed promotional gift (e.g USB/Key ring) using TinkerCAD to be 3D printed. Extension: Design own room interior using TinkerCAD Homework 5: Research how a 3D printer works	Mechanical systems – levers, linkages, gear trains, pulleys and drive mechanisms Introduction to the 4 forms of movement: linear & rotary, gear trains, pulleys; levers, gears and drive mechanisms, cams & followers... Homework 6: Research ideas for Automata on theme of 'Climate Change'	Mechanical systems cont... Automata with slot-together characters Students collaborate to design card based automata on theme of 'Climate Change' by applying knowledge of types of motion, cams & followers to make moving toy with at least 3 cams/moving parts using card modelling skills Homework 7: Research Automata designers for ideas DATA DROP
Y9 Apply Students apply their knowledge of the design process and the importance of sustainable and inclusive design: firstly, to create a game for Big Potato Games as part of national competition; and then create a recycled textiles product with a focus of gaining knowledge of types of textiles and their properties, e-textiles and production techniques. They then apply all the knowledge and skills they have developed during KS3 and apply them to an NEA style project in response to their own design brief and produce a range of prototypes.	Paper & boards: Big Potato Game Design Competition Investigate games and explore original game design based on product analysis to meet Big Potato Games National Competition Design Brief. Prototype and test ideas. Homework 1: Research existing Big Potato Games and how they are making their games more sustainable Homework 2: Research game mechanics DATA DROP	Paper & boards: Big Potato Game Design Competition Students collaborate to complete final prototype of game and packaging with graphics using CAD software (Affinity/Canva) and create slide presentation to submit to competition. Homework 3: Research and find reference images for chosen game design theme and packaging.	Textiles: Ugly Doll/Monster toy using recycled materials Introduction to types of textiles (Natural/Synthetic), primary sources and identifying fabrics suitability for purpose based on properties. Learn/practice a range of hand-stitching techniques & complete sewing machine driving licence. Homework 4 : Research environmental issues in textile industry & 6Rs of sustainability	Textiles: Doll/Monster toy using recycled materials Students work independently to design and make a sustainable ugly doll/worry monster by applying their knowledge of fabrics and a range of hand and machine stitches. Extension: e-textiles e.g include LED lights & conductive thread Homework 5: Research ugly doll mood board ideas & textile designers using recycled materials (e.g. Junker Jane) DATA DROP	Sustainable Seating (NEA style unit to design & make an IKEA chair) Research phase: Analyse existing chairs, write own design brief based on given context, investigate human factors (ergonomics & anthropometric data), forces and material properties. Experiment with a range of modelling materials and structures... Homework 6: Research User-Centre Design and create a user profile to generate creative ideas and avoid stereotypical responses/design fixation	Sustainable Seating cont... Design & Make Phase: apply 2D & 3D drawing skills to communicate design ideas. Make 3D physical models to test ideas & create 3D CAD orthographic and isometric drawing of final product idea. Write parts list and cost sheet. Evaluate Phase: Evaluate against design specification and suggest modifications. Extension: Design & make packaging Homework 7: Research IKEA Circular Design Principles Create a user profile to generate creative ideas and avoid stereotypical responses

AO1 –DESIGNER SKILLS	AO2 - MAKING	AO3 - DESIGNING	AO4 – RESEARCH & APPRAISING
Demonstrate skills required to become a successful designer	Make prototypes that are fit for purpose to address needs and wants	Draw and communicate creative design solutions to meet a design brief	Identify, investigate and evaluate designs, materials and processes and make critical judgements about design decisions

D&T KS4	Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Assessment Focus	AO1 AO4	AO2 AO4	AO1 AO4	AO2 AO4	AO1 AO2	AO3 AO4
Y10 AQA GCSE EXAM THEORY Covering theory for exam (50%) through a range of practical tasks in each materials area	Sustainability & the environment (unit 1) CORE <ul style="list-style-type: none"> Industry & Automation Enterprise & Fair Trade Sustainability & 6Rs People & Society LCA & Waste Disposal CAD/CAM Design Decisions Scales of Production Homework: Unit 1 Knowledge Retrieval Booklet	Energy, Materials, Electronics & Mechanical Devices (unit 2) CORE <ul style="list-style-type: none"> Energy Generation & Storage Smart & Modern Materials Composite Materials Electronic Systems Mechanical Systems Forces & Material Properties DATA DROP Homework: Unit 2 Knowledge Retrieval Booklet	Materials and their working properties: Papers & Boards (unit 3) SPECIALIST MATERIAL <ul style="list-style-type: none"> Types of Paper & Board Primary Source & Manufacture Stock Forms (GSM, A5, A4, A3) Printing Processes (Litho, Silk Screen) Quality Control (Registration Marks) Print Finishes (UV varnish, embossing) Die-cutting (cut, crease, perforate) Binding & Standard Components Homework: Unit 3 Knowledge Retrieval Booklet	Materials and their working properties: Timbers (unit 4) SPECIALIST MATERIAL <ul style="list-style-type: none"> Types of Timbers Sources & Processes Standard sizes & stock forms Working with Timbers: Fixings, Treatments & Finishes DATA DROP Homework: Unit 4 Knowledge Retrieval Booklet	Materials and their working properties: Metals (unit 5), Polymers (unit 6) Textiles (unit 7) CORE <ul style="list-style-type: none"> Metals (Ferrous & Non-Ferrous) Polymers (Thermoforming) Textiles (Natural & Synthetic) Homework: Unit 5,6,7 Knowledge Retrieval Booklet	Design Principles (unit 8) & Making Principles (unit 9) NEA <ul style="list-style-type: none"> The work of others & product analysis Drawing Techniques Material management & QC Students apply skills and knowledge to design & make a Biomimicry Lamp Mock Exam & Work experience DATA DROP Homework: Unit 8,9 Knowledge Retrieval Booklet
Assessment Focus	AO1 AO3	AO2 AO3	AO2 AO3	AO3 AO4	AO4	
Y11 AQA GCSE COURSEWORK Complete NEA project (50%) based on AQA contextual challenge	AO1 Section A (10 marks): Identifying & investigating design possibilities; AO1 Section B (10 marks): producing a design brief & specification Research and analyse contextual challenge, identify target market, existing product analysis, write own design brief and specification. Homework: research products DATA DROP	AO2: Section C (20 marks): Generate initial design ideas; AO2: Section D (20 marks): Developing design ideas: Communicate initial ideas using a variety of 2D & 3D methods, develop and test ideas using models, draw final idea and write manufacturing specification. Wave 1: Mock Exam DATA DROP Homework: revise topics for mock exam	AO2: Section E (20 marks): Realising design ideas (making) Make prototypes, test, evaluate and modify. Make final product based on modifications Homework: revise topics for exam using Seneca Learning & GCSE Pod	AO3: Section F (20 marks): Analysing & evaluating Wave 2: Mock Exam DATA DROP NEA Submission: May Exam preparation: Recap theory and set exam questions and revision for homework. Homework: revise topics for exam using Seneca Learning & GCSE Pod	Exam preparation: Recap theory unit booklets, review exam questions and revision for homework. Exam: June Homework: revise topics for exam using Seneca Learning & GCSE Pod	Study Leave

AO1	AO2	AO3	AO4
Identify, investigate and outline design possibilities to address needs and wants	Design and make prototypes that are fit for purpose	Analyse and evaluate: design decisions and outcomes, including for prototypes made by themselves and others; wider issues in design and technology	Demonstrate and apply knowledge and understanding of: technical principles; designing and making principles