

TCS KS4 Art and Photography Curriculum

Art and Photography:

Exam Board: Course Title:	AQA Art and Design: Fine Art Photography
QAN:	601/8088/2
Examination dates:	April/May
Controlled Assessment Dates:	

Year 10 Fine Art

	Outline of Course/SOW delivery	Key Assessments (End point task)	Skill Development	Key Vocabulary
Autumn 1	Food with basic skills and exploring materials and media	A mixed media piece with theme of food	To develop observational skills, collecting information and communicating ideas. Develop and build and understanding of the formal elements.	Observation Composition Formal elements Mixed media Proportion Annotate
Autumn 2				
Spring 1	Self-Image/Identity	Portrait themed outcome. Students must produce a self-portrait that clearly shows an understanding of the proportions and scale of the face.		
Spring 2				

Summer 1				
Summer 2	Mock Exam	Ongoing until Year 11		

Year 10 Photography

	Outline of Course/SOW delivery	Key Assessments	Skill Development	Key Vocabulary
Autumn 1	Chemical	Photogram – Students must produce a range of successful photogram understanding the H/S rules and photographer inspiration.	Introduction to chemical and manual photography, understanding how light and time effect a photograph.	Photography chemicals Englarger Depth of field Shutter speed ISO
Autumn 2	Technicals of DSLR	Sketchbook evidence with diagrams, notes and negatives with some outcomes to demonstrate an understanding of the unit.	Understanding composition and structure of a well taken image. Developing editing skills on Photoshop	Aperture Composition Photoshop Annotate
Spring 1	Structures with composition	Structure themed outcome. Students must use the photographers and skills learnt in the previous term to produce a unique and individual outcome under the theme 'structures'		
Spring 2	Portraiture and Photoshop	Creative portrait photograph. Students must develop their sketchbook further to show that they have an understanding of the key Photoshop skills to use within portraiture, This should develop into a final outcome.		
Summer 1				

Summer 2	Mock Exam	Ongoing until Year 11 and is sketchbook and outcome based depending on the question that the student chooses.		
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Year 11 Fine Art

	Outline of Course/SOW delivery	Key Assessments <i>(End point task)</i>	Skill Development	Key Vocabulary
Autumn 1	Mock Exam 3 questions chosen and issued by teacher. Students choose question that suits them best to follow as a theme for an independent project until January. 1-2 days required off timetable to produce a supervised and timed final outcome	Timed practical mock exam, presenting ideas in response to a theme through an outcome chosen by the student. Questions are taken from the exam the previous year.	Refining skills taught. Exploring and experimenting with materials in response to a question. Time management	Investigate Refine Explore Annotate Present Record
Autumn 2	Mock exam continued			
Spring 1	Exam Questions issued by AQA. Students choose which question to follow as a theme and produce work according to the marking criteria. 2 days off timetable to produce a final outcome following the theme of the exam question.	Timed practical exam, presenting ideas in response to a theme through an outcome chosen by the student. Questions are issued by AQA.		
Spring 2	Exam Continued			
Summer 1	Submission of all work completely in the GCSE.			
Summer 2				

Year 11 Photography

	Outline of Course/SOW delivery	Key Assessments	Skill Development	Key Vocabulary
Autumn 1	Mock Exam 3 questions chosen and issued by teacher. Students choose question that suits them best to follow as a theme for an independent project until January. 1-2 days required off timetable to produce a supervised and timed final outcome	Timed practical mock exam, presenting ideas in response to a theme through an outcome chosen by the student. Questions are taken from the exam the previous year.	Refining skills taught. Exploring and experimenting with materials in response to a question Time management	Investigate Refine Explore Annotate Present Record
Autumn 2	Mock exam continued			
Spring 1	Exam Questions issued by AQA. Students choose which question to follow as a theme and produce work according to the marking criteria. 2 days off timetable to produce a final outcome following the theme of the exam question.	Timed practical exam, presenting ideas in response to a theme through an outcome chosen by the student. Questions are issued by AQA		
Spring 2	Exam Continued			
Summer 1	Submission of all work completely in the GCSE.			
Summer 2				

Hospitality and Catering

Exam Board:	WJEC
Course Title:	Level ½ Hospitality and Catering
QAN:	601/7703/2
Examination dates:	March/June
Controlled Assessment Dates:	<p>March</p> <p>Unit 1: TWO practical tasks (controlled assessments) selected from six that are set by the WJEC.</p> <p>Unit 2: ONE written paper of 1¼ hours externally set and marked. (This examination will be available in e-format as well as traditional format).</p>

Year 10 Hospitality and Catering Level 1/2

	Outline of Course/SOW delivery	Key Assessments (End point task)	Skill Development	Key Vocabulary
Autumn 1	<p>In Year 10 students will look at understanding food.</p> <p>Students should have a theoretical and practical working knowledge and understanding of sound microbiological food safety principles when buying, storing, preparing and cooking food.</p> <p>Food safety when dealing with food in the hospitality industry.</p> <p>Knife safety and Kitchen Uniform.</p>	<p>Presenting a selection of recipes, e.g. shaping and finishing a dough, glazing and food styling, preparing fruits and vegetable as a garnish</p> <p>Knife and vegetable cuts Assessment</p>	<p>Students will expand on their knowledge and skills from year 9. The recipes will be adaptable for the students and they are encouraged to work more independently and produce products with their influences. They will continue to develop their cooking skills.</p> <ul style="list-style-type: none"> ▪ Vegetable cuts ▪ Sauces ▪ Main courses using chicken ▪ Deserts ▪ Pastry 	<p>Bacteria</p> <p>Carbohydrate</p> <p>Food-handling</p>

Autumn 2	<p>Safety legislations and regulations that control safe working practices in the hospitality industry HACCP, risk assessment, Food contamination</p> <p>Taster Day South Devon College Hospitality and Catering School Trip.</p>	<p>In lessons this includes content and key term quizzes as well as exam question. Verbal feedback for written and practical work.</p> <p>Sections of past exam papers. Using WJEC exam builder to test recall and understanding of topics covered.</p>	<ul style="list-style-type: none"> • Afternoon Tea • Bread making • Mini roast dinner • Mince pie 	HCCAP -Hazard analysis and critical control points
Spring 1	<p>Types of establishments, restaurant comparison Qualities of wait staff</p>			
Spring 2	<p>Styles of food service, Self-service, fast food, cafeteria, takeaway, buffet and vending Nutrition relating to the Eatwell guide Menu planning Types of menu Table d'hôtel, a la carte and themed</p>			
Summer 1	<p>Students need to undertake experimental work and produce dishes by following or modifying recipes to develop and apply knowledge and understanding related to: the working characteristics, functional properties of ingredients to achieve a particular result:</p> <p>Carbohydrates – gelatinisation,</p> <p>Food origins to include where and how foods are grown, reared, or caught</p>	<p>Practical Assessment on Commodities (Eggs, Dairy, Cereals, Flour, Rice, Pasta, Fruit and Vegetables) Assessment on several dishes. Planning a two course meal and including equipment, time plan, health and safety and quality checks Assessment on 3 preparation methods and 3 cooking methods/cooking skills will be the main focus of assessment.</p>	<ul style="list-style-type: none"> • Lemon Meringue Pie • Making fresh pasta • Ravioli • Springrolls • Pavlova 	

Summer 2	<p>UNIT 2: Student describe the operation of the kitchen Describe the operation of front of house Explain how hospitality and catering provision meet customer requirements</p>	<p>The Hospitality and Catering Industry Onscreen assessment UNIT 2: 1st attempt The highest grade will be taken from the two attempts and go towards 40% of the final grade The external assessment is available in June each year</p>	<p>All students will revise throughout the course. From year 10 students will have been taught the 2 units. This is an opportunity for students to outline particular topics or areas they feel they need to improve their knowledge and skills, in preparation for the exam. The exam will be based on different food groups/nutrition and diets and the catering and hospitality sector.</p>	
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Year 11 Hospitality and Catering Level 1/2

	Outline of Course/SOW delivery	Key Assessments <i>(End point task)</i>	Skill Development <i>(How does this unit build on prior knowledge?)</i>	Key Vocabulary <i>(URL link to Tier 2&3 key words)</i>

Autumn 1	<p>In Yr 11 students develop their learning by working towards work-related purposeful tasks. Learners will select and apply their learning in completion of these tasks. Each unit has also been designed to provide learners with an understanding of how the learning is relevant to the sector.</p>	<p>All units are assessed through summative controlled assessment. Students will need to look the impact of particular factors when sourcing their ingredients for their chosen dish. Practical Assessment on planning for cooking: (i) a single dish (ii) a number of dishes in one session (to ensure a dovetailed action plan)</p>	<p>Students will expand on their knowledge and skills from year 10. The recipes will be adaptable for the students work more independently and produce products that relate to their design brief. They will continue to develop their cooking skills and enable students to gain knowledge, understanding and skills relating to a specific vocational sector. In addition to development sector specific knowledge and understanding, these units also support students to develop the essential employability skills that are valued by employers, further and higher education.</p>	<p>Antibiotic Display-until-date Textured vegetable protein (TVP)</p>
Autumn 2	<p>For each food commodity students need to know and understand the value of the commodity within in the diet and the features and characteristics of each commodity with reference to their correct storage to avoid food contamination. The working characteristics of each commodity, with reference to the skill group and techniques when subjected to dry/moist methods of cooking</p>	<p>In lessons this includes content and key term quizzes as well as exam question. Verbal feedback for written and practical work.</p> <p>Sections of past exam papers. Using WJEC exam builder to test recall and understanding of topics covered.</p>		

Spring 1	Students continue to develop their presentation skills, focussing on producing a two course meal in line with their set brief. They will investigate and research the culture and origin of the ingredients used and their nutritional content.		Students will be improving their dishes for their final assessment. They will draw on past learning and techniques of finishing foods and the appropriate cooking methods used for their final dishes.
Spring 2	UNIT 1: Students apply their learning to safely prepare, cook and present nutritional dishes. They will draw on their learning of different types of provision and kitchen and front of house operations in Unit 1, as well as personal safety in their preparations.	Unit 1: Hospitality and Catering in Action is internally assessed: 60% of final grade	
Summer 1	Students apply their learning by considering all aspects of the vocational sector. They should acquire knowledge of all aspects of the industry and be able to propose new hospitality and catering provision for specific locations.		All students will revise throughout the course. From year 10 students will have been taught the 2 units.
Summer 2	Unit 2: Students describe the operation of the kitchen Describe the operation of front of house Explain how hospitality and catering provision meet customer requirements	Unit 2: The Hospitality and Catering Industry will be externally assessed: 40% of final grade <ul style="list-style-type: none"> • 2nd attempt The highest grade will be taken from the two attempts and go towards 40% of the final grade.	All students will revise throughout the course. From year 10 students will have been taught the 2 units.

Construction

Exam Board:	Edexcel
Course Title:	Pearson BTEC Level 1/Level 2 First Award in Construction and the Built Environment
QAN:	600/6817/6
Examination dates:	January or May
Controlled Assessment Dates:	

Year 10

	Outline of Course/SOW delivery	Key Assessments	Skill Development	Key Vocabulary
Autumn 1	Unit 1 Construction Technology	Ongoing assessment of work covered with exam questions	Fresh start for construction course	Strength, stability, fire resistance, thermal insulation, sound insulation, weather resistance, sustainability, British Standards, foundations, Sustainability, prefabrication
Autumn 2	Unit 1 Construction Technology	Unit 1 Construction Technology Past papers	Developing on fresh start with continued subject knowledge	Load-bearing, damp-proof membranes, Pre-construction work, Sub-structure groundwork's, Superstructures – wall, floors, roofs

Spring 1	After unit 1 external assessment start Unit 3 Construction and Design Learning aim A: Understand the work of the construction industry	Unit 1 External assessment 01/01/20	Knowledge of the contribution to the infrastructure of the built environment in terms of: transport networks (road, rail, air & water), drainage, provision of services (gas, electricity, water and telecommunications), flood defences.	Construction, industry, management, site, construct, processes, building site, infrastructure, projects, phase of a project, construction sector, green spaces, regeneration, civil engineering, commercial, sustainability
Spring 2	Unit 3 Construction and Design Learning aim B: Understand a client's needs to develop a design brief for a low-rise building	Unit 3 assessment 1 Early in Spring 2 half term time built in for resubmission	Using the analysis of needs and constraints, produce a client brief that will aid the development of appropriate design solutions, existing situation, project requirements, budget, mood board, end users.	Aesthetics, sustainability, functionality, occupant, built environment, transport networks (road, rail, air & water), drainage, provision of services (gas, electricity, water and telecommunications), flood defences
Summer 1	Unit 3 Construction and Design Learning aim C: Produce a range of initial sketch ideas to meet the requirements of a client brief for a low-rise building	Ongoing assessment on course content.	Learn to sketch initial ideas in response to the client brief: Concept ideas for external appearance	thermal efficiency, alternative, energies, orientation, carbon footprint, constraints, contemporary or traditional, mood boards,
Summer 2	Unit 3 Construction and Design Learning aim C: Produce a range of initial sketch ideas to meet the requirements of a client brief for a low-rise building	Unit 3 assessment 2 Early in Summer 2 half term allowing time for resubmission	Initial sketch ideas in response to the client brief: Development of initial concepts into freehand sketches of external views in one- or two-point perspective.	local planning, local plan, Building Regulations, local needs, community consultations, planning objections, budget, concept ideas,

Year 11

	Outline of Course/SOW delivery	Key Assessments	Skill Development	Key Vocabulary
Autumn 1	Unit 6: Exploring Carpentry and Joinery Principles and Techniques Learning aim A: Understand tools, materials and equipment used in carpentry and joinery	Internal assessment for Unit 6 at end of half term	Learner to will develop an understanding of the tools, materials and equipment used in carpentry and joinery including types of wood, glues and fixings	Carpentry and joinery, HASAWA 1974, PPE, carpentry, joinery tools, high-visibility, eye protection, ear defenders, dust mask, safety boots, fixings,
Autumn 2	Unit 6: Exploring Carpentry and Joinery Principles and Techniques Learning aim B: Develop practical skills using safe techniques to produce a timber frame	Internal assessment for Unit 6 Marking out the frame at end of term	Students will learn to use the marking out tools to accurately mark out timber for wooden frame. (using four different joints)	Safe use and storage, mitre joint, dovetail joint, tenon, safe manual handling techniques, Hazard identification and risks, musculoskeletal injuries, safe working practices, appropriate behaviour
Spring 1	Unit 6: Exploring Carpentry and Joinery Principles and Techniques Learning aim B: Develop practical skills using safe techniques to produce a timber frame	Internal assessment for Unit 6 Making the frame at end of half term	Students will learn to use the cutting tools to make the wooden frame accurately (learning to cut the different types of joint)	
Spring 2	Unit 3: Scientific and Mathematical Applications for Construction Learning aim B: Use mathematical techniques to solve construction problems	Internal assessment for Unit 3 Mathematical techniques	Students will draw on their knowledge from Maths lessons and learn to apply it to a construction context	Algebraic and graphical methods, Rearranging, formulae, Substituting values into and evaluating formulae, solving equations, Cartesian coordinates, Gradient and intercept, Trigonometric functions

Summer 1	Unit 3: Scientific and Mathematical Applications for Construction Learning aim A: Understand the effects of forces and temperature changes on materials used in construction	Internal assessment for Unit 3 Understanding the effects of forces	Students will draw on their knowledge from science lessons and learn to apply it to a construction context	Effect of forces, gravitational forces, forces as loads, $F = ma$, compression and tension, shear and bending, material stress, strain, modulus of elasticity, Hooke's law ($F = -Kx$), Common construction materials, cement, aggregates, concrete, timber, masonry, plastics, steel, aluminium, Specific heat capacity, thermal conductivity and thermal resistance,
Summer	Unit 1 Construction Technology	External assessment if required		

Design and Technology

2020-21	Design Technology			Year 10
<p>Projects completed during Year 10 may take place in a slightly different order depending on the rooming and resources available: The focus will be to recap the core knowledge covered in Key Stage 3 to meet the core Specification as well as building on the specialist knowledge and theory required for the exam. Students will be required to complete 50% exam theory as well as the 50% practical skills content as we go through the year.</p>				
Yr 10	Task Outlines	Learning knowledge	Skills	Assessment
Term 1	Students to design and manufacture an interactive mechanical toy/ child's play centre.	Developing an understanding for producing detailed technical specifications with quantitative data in order to guide a design	Developing 3D sketching and rendering skills in order to communicate design ideas clearly: Isometric; Oblique; 2 point perspective.	Exam question homework will be given regularly to ensure that the specialist learning in this unit can be recalled effectively
	Use CAD to communicate design ideas and draw components to high levels of accuracy	Understanding of CAD systems like 2D Design and Auto Desk Fusion in order to draw components accurately.	Drawing using CAD to create both 2D and 3D imagery a	The development of ideas will be graded using the NEA mark scheme
	Use of CAM/ Laser/ 3D printing to produce component parts for the toy.	Understanding of input/control and output devices	Be able to use simulation and animation graphics to trial ideas effectively before manufacture	The final product will be graded using the NEA mark scheme
	Use hand tools with skill and safety to cut and shape component parts in wood and plastic	Understanding of the types of movement: Linear, Reciprocating, Oscillating, Rotary	Practical skills focus using specialist hand tools and wood working joints to assemble a structure.	
	Adapt and improve their work though an iterative approach to their designing and making	Develop an understanding for the functions of mechanical devices used to produce different sorts of movement including the magnitude and the direction of forces.	Develop their understanding for using thermoforming plastics like Acrylic, HIP.	
	Assemble a product with high degrees of accuracy using a range of component parts	Understanding the properties of different woods- Hard, soft and manufactured boards	Applying evaluative skills to their work in order to progress through iterations	

Yr1 0	Task Outlines	Learning knowledge	Skills	Assessment
Term 2	Students to design and manufacture a LED night light for the garden or home.	Understanding the key vocabulary used in a specification and being able to use it in analysing a product for: Form, Function, Client and User Requirements,	Development of evaluative skills when reviewing existing products and considering the needs of others.	
	Research task through disassembly; interviewing client; target market questionnaires. Considering what, where, how and why the product will be used.	Performance Requirements, Materials and component systems; scale of production and cost; sustainability; aesthetics; marketability, consideration and innovation.	Developing critical thinking skills whilst using a framework to assess and evaluate regarding constraints and opportunities.	NEA Assessment linked to investigation of a Product and producing a specification
	Students to develop an understanding for using electronic components to create a night light: This can be further developed into using a variety of different input devices, control and programming devices to extend the core electronics knowledge. Modelling through breadboard, Yenka and Microbit.	The role of output devices in electronic systems including buzzers and LED's		
		Control devices and components including; the role of switches in electronic systems; transistors and resistors.		
		Programming components to embed functionality: Using simple routines to control outputs with delays, loops and counts.	Developing programming skills when using a microbit controller	
		Sensors including: The roles of sensors in electronic systems; LDR's; Thermistors Powering systems; batteries and cells; solar cells, mains electricity, wind power.	Developing analytical thinking skills and visualisation skills when using breadboards to prototype circuits from 2D diagrams to a 3D circuit and fault finding.	Classroom testing of knowledge to test retention of information through 5 min starter continual assessment of electronics knowledge
Manufacturing the PCB's				

	Exploring the properties of thermo and thermosetting plastics through practical and theory.	Be able to apply knowledge and understanding of working properties, characteristics and applications of Acrylic, HIP, Biopol, Polyester Resin, Urea Formaldehyde.		Mock Exam questions used to assess knowledge and understanding of polymers
	Sustainability: Life cycle analysis of plastics linked to environmental concerns	Sustainability linked to transportation costs; pollution; demand on natural resources; waste generated:	Developing exam skills through writing extended answers around the sustainability, environmental issues with links to social, moral and ethical concerns	Mock exam timed questions to assess.
		Environmental perspective when evaluating use of materials; carbon footprint; energy consumption during manufacture; LCA		
	Using CAD systems to design elements of the light	Increased knowledge using CAD systems when applied to the development of students' ideas	Developing computer aided drawing skills using 2D design and Auto Desk fusion.	
	Manufacturing the light using 3D printing and the laser.	Scales of Production: Constraints linked to one off, batch, mass and continual; JIT and Lean manufacturing production	Developing analytical skills to assess and improve their own work when simulating their designs.	
	Workshop practice to manufacture and assemble the light	Practical knowledge gained in the understanding and working characteristics of wood and plastics. Operational knowledge gained in using workshop machinery and hand tools	Developing evaluative thinking skills through the continual analysis of their product whilst applying quantitative data in order to meet the given specification	NEA Assessment mark scheme used to grade product
Yr10	Task Outlines	Learning knowledge	Skills	Assessment
3	Introduction of Enterprise: Designing a product for a not for profit organisation- charity	Understanding what is meant by privately owned business, cloud funding, government funding for business start ups and not for profit organisations.	Manufacturing skills using material specific tools and equipment safely with developing accuracy	5 min starters used to recap and assess knowledge

Graphic: Packaging or Sheet Metal project- Focus on sketching and communication skills	Develop, communicate, record and justify design ideas applying suitable drawing techniques	Developing a range of communication skills to include: Freehand sketching-2D and 3D; Annotated sketches; 3D models; isometric and oblique projection; orthographic and exploded views.	NEA assessment linked to to the development of design ideas
Evaluating existing products considering ethical perspectives and sustainability	Developing an understanding for looking beyond the surface regarding a product: Where it was made; who it was made for; who will it benefit; fair trade products. Greater understanding of ethics	Exam techniques; Planning skills when answering extended questions	Mock exam extended questions on the subject both timed and practiced.
Sustainability: Life cycle analysis of single use plastics linked to packaging. Recycling of materials; Reduction; Reuse	Manufacturing processes and Recycling of cards or metals.		
Modelling of ideas to test both materials and iterations of design ideas	Understanding the properties of either syllabus selected graphic boards/ ferrous- non ferrous metals and alloys		
Drawing development net of product using CAD systems	Material specific tools and equipment - names and function	Developing spatial and visualisation thinking when converting a 3D shape to 2D.	
Planning for production using flow charts.	Understanding critical pathways; Understanding how and why flow charts are used to communicate information	Using Power Point to create industry standing planning.	
Implementing QC and QA systems	Understanding what is meant by total quality management and how it is applied in industry when using JIT production	Understanding the QC skill and QA measures that are used to produce a quality product first time.	5 min starter tests to recap and assess knowledge base
Manufacturing the product using metal working equipment or the laser if it is a card board product:	Develop and understanding for the working properties and characteristics of the given materials	Development of manufacturing skills working towards greater accuracy with QA systems.	NEA assessment based on manufacture skills and processes

Yr10	Task Outlines	Learning knowledge	Skills	Assessment
June 1st	Start of Year 11 coursework: Context areas are released from the exam board.	Developing further understanding of the exam board marking criteria and how it is applied.	Using search engines, blogs and on line groups to extract information	All work will be assessed using the NEA framework: The project will equate to 50% of the GCSE
	Investigation of context areas through trips and research to establish the environment where the products may be used	Establishing the clear wants, wishes and needs of their target market. Maslow's theory	Analysis of data to extract information	
	Establish the needs of the users: How what, where, why and how their potential product may be used		Developing their skills of analysis and evaluation in working out the constraints and opportunities linked to the project they have chosen	Peer assessment used in application of mark scheme to pre mark each others work
	Researching existing Products			
	Establishing the needs of the target market through questionnaires, surveys and interviews.			

Motor Vehicles

Unit	Key learning for this Unit linked to KS4 syllabus	Key Skills	Assessment opportunities	Key Vocabulary
ET211 Health And Safety Practices In An Engineering Maintenance Environment	This unit enables the learner to develop the skills and understanding necessary to use resources economically and perform in a safe manner in an engineering environment. It provides an understanding of health and safety legislation and the related duties of employers and employees and also an appreciation of significant risks and how to identify and deal with them.	1 Understand and use correct personal protective equipment in an engineering environment. 2 Understand and use effective housekeeping practices in an engineering environment 3 Understand key health and safety requirements relevant to the engineering environment 4 Understand and act upon hazards and potential risks in an engineering environment 5 Understand and act upon personal responsibilities	Written work marked internally. Online test at end of year 10	Toxic, Corrosive, Poisonous, Harmful, Irritant, Flammable, Explosive, Hazards, Risks, Health and Safety, Personal Protective Equipment, HSE, HASWA, COSHH, EPA, LOLER, Manual Handling operations Regulations 1992, PPE Regulations 1992, Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985, PUWER.

<p>ET212 Tools And Equipment Used In An Engineering Maintenance Environment</p>	<p>This unit enables the learner to develop the skills and understanding necessary for the correct selection, care and use of hand tools and equipment when modification, fabrication and maintenance takes place in an engineering environment. It also supports the correct selection and application of materials used when fabricating, modifying or carrying out maintenance in an engineering context.</p>	<p>1 Be able to select, maintain and use hand tools and measuring devices in the engineering maintenance environment 2 Be able to understand, prepare and use common workshop equipment 3 Be able to select and use materials in an engineering environment 4 Be able to understand and use engineering maintenance, fabrication and fitting principles</p>	<p>Written work marked internally. Online test at end of year 11</p>	<p>Rule/Tape Callipers Feeler Gauge Volume Measures Micrometer Dial Gauges Torque Wrenches Depth Gauges Verniers, Files, Hacksaws And Snips, Hammers, Screwdrivers, Pliers, Spanners, Sockets, Punches, Types Of Drill And Drill Bits, Taps And Dies, Stud Removers, Marking Out Tools, Gaskets And Seals, Sealants And Adhesives, Fittings And Fasteners, Locking Devices, Gaskets And Seals, Sealants And Adhesives, Fittings And Fasteners, Locking Devices</p>
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<p>ET221 Internal Combustion Engines, Components and Systems</p>	<p>This unit enables the learner to develop an understanding of the construction and operation of common internal combustion engine mechanical, lubrication, cooling, fuel, ignition, air and exhaust systems. It also enables the learner to develop the skills required when removing and replacing system components and for the evaluation of their performance.</p>	<p>1 Know internal combustion engine mechanical systems components and principles 2 Know internal combustion engine lubrication system components and principles 3 Know internal combustion engine cooling, heating and ventilation system components and principles 4 Know internal combustion engine fuel system components and principles 5 Know internal combustion engine ignition system components and principles 6 Know internal combustion engine air supply and exhaust system components and principles 7 Be able to remove, replace and test a range of internal combustion engine systems, units and components.</p>	<p>Each task completed is marked individually on completion. No external testing</p>	<p>Four Stroke, Spark Ignition, Compression Ignition, Wankel Rotary, Compression Ratio, Cylinder Capacity, Power, Torque, TDC, BDC, Stroke, Bore, Full Flow, By Pass, Wet Sump, Dry Sump, Classification Of Lubricants, Properties Of Lubricants, Methods Of Reducing Friction, Heat Transfer, Linear And Cubical Expansion, Specific Heat Capacity, Boiling Point Of Liquids, Multi Point Injection, Single Point Injection, Direct Injection, Indirect Injection, Properties Of Fuels, Combustion Processes, Exhaust Gas Constituents, Supercharging, Turbo Charging, Exhaust Gas Re-Circulation, (EGR)Secondary Air Injection, Catalytic Converters, Bearing, Cam Belt, Camshaft, Compression Ring, Connecting Rod, Crankcase, Crankshaft, Cylinder, Cylinder Head, Cylinder Head Bolts, Cylinder Head Gasket, Cylinder Liner, Dual Overhead Camshaft (DOHC), Engine Block, Engine Displacement, Female Torx, Flat Engine, Four-Valve Cylinder Head, Gaskets, Gudgeon Pin, Hex Head Bolt, Hydraulic Valve Lifter, Ignition System, Ignition Timing, Inline Engine Block, Long/Short Block, Main Bearings, Male/Female Torx, Oil Control Ring, Oil Pan, Oil Pump, Oil Seal, Overhead Cam Engine, Overhead Valve Engine, Piston, Piston Rings, Pollutants, Pulley, Push Rod, Rocker Arm, Rocker Cover, ,Single Overhead Camshaft (SOHC), Sprocket, Stoichiometric Ratio, Sump, Tappet, Timing Belt, Timing Chain, Timing Gears, V Engine,</p>
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Valves Inlet/Exhaust, Valve Cover, Valve Cover Gasket, Valve Guide, Valve Lifter, Valve Seat, Valve Spring, Valve Stem, Valve Stem Seal, Valve Timing

<p>ET216 Supporting Job Roles In An Engineering Environment</p>	<p>This unit enables the learner to develop knowledge and understanding of typical organisational structures, information gathering and how to keep good working relationships with customers and colleagues in an engineering work environment, by using effective communication and support skills</p>	<p>1 Know and understand key organisational structures, functions and roles within an engineering work environment 2 Know the importance of obtaining, interpreting and using information in order to support their job role within the an engineering environment 3 Know communication requirements when carrying out repairs in an engineering environment 4 Be able to demonstrate good working relationships with colleagues and customers in an engineering work environment</p>	<p>Written work marked internally. Online test at end of year 10</p>	<p>Reception, Manufacture / Service / Repair Workshop, Parts, Sales, Administration, Flat, Matrix, Team, Hierarchical, Trainee, Skilled Technician, Supervisor, Manuals, Parts Lists, Computer Software / Internet, Manufacturer, Diagnostic Equipment, Recording Maintenance And Repairs, Machine Specifications, Component Specifications, Oil And Fluid Specifications, Equipment And Tools, Identification Codes, Reporting Delays, Additional Work Identified During Repair Or Maintenance, Keep Informed Of Progress.</p>
<p>Unit</p>	<p>Key learning for this Unit linked to KS4 syllabus</p>	<p>Key Skills</p>	<p>Assessment opportunities</p>	

<p>ET234 Removing and Fitting Basic Light Vehicle Mechanical, Electrical and Trim (MET) Components and Non Permanently Fixed Vehicle Body Panels</p>	<p>This unit enables the learner to develop the knowledge and skills needed to carry out a range of removal and fitting of basic mechanical, electrical and trim (MET) components and non-permanently fixed light vehicle body panels. It also covers the evaluation of the operation of the components when fitted</p>	<p>1 Know how to carry out removal and fitting of basic light vehicle mechanical, electrical and trim (MET) components 2 Know the procedures required to carry out the removal and fitting of basic light vehicle non permanently fixed vehicle body panels 3 Be able to work safely, with the appropriate tools and equipment when carrying out removal and fitting of basic MET components and non-permanently fixed light vehicle body panels 4 Be able to carry out removal and fitting of basic MET components and non-permanently fixed light vehicle body panels</p>	<p>Each task completed is marked individually on completion. No external testing</p>	<p>Bumpers, Headlamp Units, Road Wheels, Batteries, Bonnet And Boot Trim, Interior Trim Components, Exterior Trim Components, Pop Rivet, Plastic Rivet, Plastic Capture Nut, Nut And Bolt, Shoulder Bolt, Nyloc Nuts, Washers, Spring Washers, Self Tapping Screws And Bolts, Quick Release Plastic Trim Fastenings, Trim Tapes, Adhesives And Sealers, Wings, Doors, Bonnets, Boot Lids And Tailgates, Bumper Bars, Covers And Components, Non-Welded, Non-Structural, Correct Alignment, Vehicle Technical Data, Removal And Fitting Procedures, Legal Requirements, Captive Nuts, Trim Clips</p>
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<p>ET214 Mathematics and Science for Engineering Technicians</p>	<p>This unit is intended to provide the learner with an appreciation of the aspects of science and mathematical knowledge that may be required, to solve problems found in the engineering environment. It is expected that some of the mathematical principles in this unit will be used to enhance understanding of the science element and that the science will be integrated with the mathematics in an engineering context. The aim is to broaden candidates understanding of science and mathematics, in order to support further studies.</p>	<p>1 Know how to use number in the engineering environment 2 Know how to use algebra in the engineering environment 3 Know how to use geometry and mensuration in the engineering environment 4 Be able to interpret graphical and statistical data 5 Know and apply scientific principles related to the engineering environment</p>	<p>Written work marked internally. Online test at end of year 11</p>	<p>Tally Charts, Bar Charts, Pie Charts, Graph, Common & Vulgar Fractions, Decimals, Ratios (Compression, Gear, Fluid, Area Etc), Prime And Common Factors, Simple Powers E.G. N2 N3, N4, N5, Simple Roots E.G. Square, Cube, Areas, Volumes, Lengths, Ratios, Binary Number, Denary Numbers, Rectangles, Triangles, Circles, Annulus, Cone , Pyramid, Sphere, Stoichiometric Ratio.</p>
<p>PSD05 Preparing for Work</p>	<p>To encourage the learner to look at their own skills and qualities in relation to those needed at work and use this understanding to identify key personal and interpersonal information needed for the application process</p>	<p>1 Understanding the skills and qualities needed for working life 2 Be able to research personal career opportunities and progression routes</p>	<p>Marked internally. No online assessment</p>	<p>Displaying Positive Body Language, Showing Interest, Initiative, Applying Effort, Being Confident, Effort, Contributions, By Others, Being On-Time Time Schedules, Promptly Informing Appropriate Personnel Of Planned And Unforeseen Lateness, Hard Working, Reliable, Willing To Learn, Presentable, Positive Attitude, Light Vehicle Technician, Heavy Vehicle Technician, Motorcycle Technician, Parts Advisor, Sales Person, Valetor, Body Technician, Painter.</p>

<p>ET213 Undertake A Project in the Engineering Environment</p>	<p>This unit will enable learners to develop the knowledge and skills necessary to research, plan and carry out a non complex project in an engineering environment. Whilst it is expected that learners will be able to undertake a project of interest to them it is also recognised that it must be achievable with regard to complexity, time and resource and as such, guidance will be needed from mentors in their centres as to suitability. It is also expected that mentors will be part of the project review process.</p>	<p>1 Understand how to carry out and report on a project 2 Be able to identify and research a suitable topic for a project in the engineering environment 3 Be able to plan for a project in the engineering environment 4 Be able to carry out and report on a project in the engineering environment</p>	<p>Marked internally. No online assessment but must achieve a pass to qualify</p>	<p>Title, Aims, Objectives, Methodology, Information Sources, Resources, Final Outcome, Aims And Objectives, Project Brief, Review, Interim Reports, Reference, Stakeholders, Perspective Planning, Implementation, Methodology, Results/Findings, Interim Review Meetings, Physical Observation, Progress Reports, Comparisons, Diary, Log Of Actions.</p>
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