	Topic / main focus question	Lesson 1-2	Lesson 3-4	Lesson 5-7	Lesson 8-10	Lesson10-18	Lesson19-20
Year 7	**Structures Project & An introduction to 2D Design CAD Package**	**Introduction to D&T and Health and Safety** **What is Design & Technology?** • Define the meaning of D&T and discuss it's place in society. • Ensure key concepts of DT and health and safety are embedded with risk assessments, discussion and poster design).	• Being accountable for personal safety in the workshop. • Contribute to a safe working environment in the workshop for all. • Understand the importance of health and safety in the workshop. Develop awareness of procedures that are in place to eliminate risk and how to respond in different situations.	• Rendering Techniques Sketching & shading exercises to show properties of materials. • Logo Design • Use of Colour • Principles of VIS; visible, identity and simple. • Design Ideas • Final Design • Application of designs to cars – Teamwork.	**Theory** • Natural and manmade structures • Forces acting upon a structure • Named parts within a structure • Technical terminology	**Practical** • Understanding the properties of materials. • Collaborative learning • Using existing structures for inspiration. • Manufacturing and rationing resources. • Technical terminology.	• Develop design ideas using imported silhouettes on 2D Design. • Develop Computer Aided Manufacturing skills. • Understand the importance of dimensions. • Develop the skill to be able to vectorise and manipulate images in CAD software package. • Understand how to explode and regroup images. • Develop an understanding that the laser cutter functions by altering the speed and power. • Understand that the laser cutter recognises different coloured lines and that the speed and power will alter the outcome. (Cutting &/or Engraving)..
	Assessment	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback • Observations • Physical Testing - Test to check the success of cars/structures. • Visual and audio assessment of teamwork. • Peer and self-assessment of interaction in the task and the effectiveness of the structure.	• Continuous visual and audio assessments • Formative feedback. • Visual and audio assessments. • Questioning. • Observations End of unit test (summative)
	Tier 3 Vocabulary	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback

	Topic / main focus question	Lesson 1	Lesson 2-6	Lesson 7-10	Lesson 11-14	Lesson 15-17	Lesson 8-28
Year 8	**Ticket & Mug Project**	• Health and Safety • Design brief and task analysis • Specification	• Rendering Techniques Sketching & shading • Logo Design/Lettering • Use of Colour • Principles of VIS; visible, identity and simple. • Design Ideas for logos • Final Design of Ticket & Mug	• Smart Materials • Applications • Demonstrations • Research activities on existing products Ticket/Event/Mug/Packaging information. • Questionnaire	• Develop design ideas using imported silhouettes on 2D Design. • Develop Computer Aided Manufacturing skills. • Generate unique Ticket and Mug designs. • Understand the importance of dimensions. •	• Develop the skill to be able to vectorise and manipulate images in CAD software package. • Understand how to explode and regroup images. • CAD questionnaire	• Sublimation Printing of Mug • Printing Tickets • Producing Packaging for Mug • Evaluation of Project
	Assessment	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback	• Self-assessment • Peer assessment • Questioning • Formative feedback
	Tier 3 Vocabulary	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback

	Topic / main focus question	Lesson 1	Lesson 2-6	Lesson 7-10	Lesson 10 - 14	Lesson 14 - 17	Lesson 17 - 28
Year 9	**Passive Amplifier Project**	• ***Existing* product research ACCESS FM.** • Define what passive, amplify and acoustics all mean (vocabulary focus). • Research existing products • Identify who the target market is and evaluate the product using ACCESSFM. • Be critical of products and develop an understanding that there is always multiple ways of doing the same thing. • Creativity, innovation and risk taking are all factors driving technology forward.	• **Develop skills using 2D Design** • Understand the importance of a plan and using accurate dimensions. • Develop orthographic templates using millimetres in preparation for the laminated assembly of the passive amplifier. • Apply a range of CAD functions using 2D Design to effectively develop the passive amplifier speaker. • Growth mindset – anything is possible.	**Practical Skills** • Demonstrate good health and safety awareness for themselves and others. • Plan the layout of passive amplifier onto the plywood ensuring there is minimal waste and reduced cutting time through thoughtful planning. • Develop the skill to be able to dismantle and reattach coping saw blades and the relevant parts and forces acting upon the saw. • Apply practical skills to cut plywood using both coping saws and tenon saws safely and effectively.	**Practical skills** • demonstrate safe and effective setup and use of pillar drill. Having a clear understanding of the risks that are involved and how to minimalise them. • Identify safe working practice; identify and address any misconceptions of peers. • Understand the importance of PPE. • Demonstrate good working skills in a collaborative learning environment. • Apply cross and draw filing techniques	**Development and modification** • Develop the aesthetics of the product using a range of hand skills to expose the veneers of the plywood. • Apply independent ability and knowledge on 2D Design to import and vectorise images that can then be exported and laser cut on to designs. • Modify the passive amplifier product using a range of materials and laser cutting processes that are supported by 2D Design	**3D Design exploration** • a new skill base using Autodesk Inventor. • Understand how different tools, functions and planes can be interacted with to develop unique ideas. • Apply basic 3D designing principles to enhance the production of futuristic concepts.

	Assessment	Visual and Audio assessments	• Formative • Visual and audio assessments • Questioning • Observations	• Visual and Audio assessments • Peer and self-assessments • Questioning • Observations	• Observations • Visual and audio assessments • Self and peer assessments	• Observations • Questioning • Self and peer assessments.	• Formative feedback. • Visual and audio assessments. • Questioning. • End of unit test (summative)
	Tier 3 Vocabulary	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback	**In booklets** Technical terminology used and expected in verbal communication and feedback

NB

- *Much more challenge is being provided to enable pupils to achieve higher than would normally be expected.*
- *All lessons/resources will be the same for all classes – **teach to the highest**, scaffolding of tasks will help any who are struggling – the focus is to challenge their comfort zone and encourage them to think away from past experiences of their learning.*
- *Tier 2/3 vocabulary will be used, emphasised and tested throughout.*
- Where possible, all homeworks (apart from revision) will now be Geography in the News (Internet Geography weekly topics), skills tests and flipped learning

Reasoning for curriculum change at KS3 (years 7 – 9) and links/overlaps to the GCSE course (years 10 and 11):

- ***It is providing a more in-depth knowledge rich curriculum of key events that occur in the world.***
- ***Skills and knowledge from the old GCSE will help prepare them for the rigours and depth of the new GCSE. There is clear differentiation between skills, vocabulary and hence, depth of knowledge between KS3 and GCSE. It has been documented that pupils achieve their greatest learning when the curriculum is based on knowledge retrieval, interleaving and spiralling of skills and knowledge is developed. The GCSE courses will also study new case studies in more depth than at KS3, but it is expected pupils will use prior learning to help contextualise events and responses.***

		Autumn		**Spring**		**Summer**	
		6 weeks	**8 weeks**	**6 weeks**	**7 weeks**	**6 weeks**	**7 weeks**
Year 10	**Topic**	**New and emerging technologies; Materials and their working properties**	**Energy, materials, systems and devices; Common Specialist technical principles**	**Polymers & Ecological footprint**	**Timbers and manufacturing techniques & Specialist technical principles**	**Energy, materials, systems and devices**	**NEA Preparation**
	Theory Content Skills	1. Industry and enterprise 2. Sustainability and the environment 3. People, culture and society 4. Production techniques and Systems 5. Informing design decisions 14. Paper and Boards 18. Polymers	6. Energy generation 7. Energy storage 8. Modern materials 9.Smart materials 10. Composite materials and technical textiles 19. Forces and stresses on materials and objects Papers and boards Natural and manufactured	21.Ecological and social footprint 22. The six R's 33. Sources, origins and properties 34. Working with polymer-based materials and fixings 35. Commercial manufacturing and quality control.	Improving functionality Scales of production 27. Sources, origins and properties 28. Working with timber-based materials 29. Commercial manufacturing, surface treatments and finishes	Systems approach to designing Electronic systems processing Mechanical devices	NEA Expectations how to format folder. Manufacturing a product based upon research, feedback, resource availability and equipment access using an iterative design process. Generation of ideas using sketches, CAD and prototypes, with well documented

			timber				reflective and forward-thinking accounts. Socrative tests in all subject areas to challenge the understanding of students to ensure that the revision and
	Practical Content Skills	Orthogonal design work using 2D Designs. Production and manufacture of net design for trainer designs.	Development of 2D Design ideas for laser cut decoration/keyring. Communicating ideas using Sketchup.	Development of CAD/ CAM skills using Autodesk Inventor to generate 3D water bottle.	Continuation of Autodesk Inventor skills through rocket project.	Development of CAD skills using Circuit Wizard 2.	Isometric and orthogonal sketches including relevant annotations linked to ACCESS FM.
	Assessment	Work booklet Design work in 2D Design Observations Self-assessment Formative feedback	Work booklet Design work in 2D Design and Sketchup Observations Self-assessment Formative feedback	Work booklet Design work in Autodesk Inventor Observations Self-assessment Formative feedback	Work booklet Design work in Autodesk Inventor	Work booklet Design work in Circuit Wizard 2.	Socrative tests Design work
Year 11	**Topic**	**NEA Assessment**	**NEA Assessment**	**NEA Assessment**	**Examination - Preparation**	**Examination- Preparation**	**Examination- Preparation**
	Content Skills	• Research • Specification • Design Ideas • Prototyping	• Development • Manufacturing • Realising ideas • Evaluation	• Completion of NEA • Research • Specification • Design Ideas • Prototyping Development • Manufacturing • Realising ideas • Evaluation	• Communicating ideas using sketching and annotations. • Examination answering techniques.	• Student directed revision on areas of weakness or need for improvement.	• Student directed revision on areas of weakness or need for improvement.
	Assessment	• Investigating • Designing • Making • Analysing and evaluating.	• Investigating • Designing • Making • Analysing and evaluating.	• Investigating • Designing • Making • Analysing and evaluating.	• Socrative Quizzes • Past examination questions. • Self and peer assessment.	• Socrative quizzes • Past papers • Self and peer assessment • Formative feedback • Revision sessions	• Socrative quizzes • Past papers • Self and peer assessment • Formative feedback • Revision sessions

NB

- *Year 11 work takes into account the changes announced by Ofqual, September 2020 re: '* ***design and technology – there is no longer a requirement for the production of a full prototype which will allow teachers to make the best use of teaching time'.***
- *All lessons/resources will be the same for all classes –* ***teach to the highest****, scaffolding of tasks will help any who are struggling – the focus is to challenge their comfort zone and encourage them to think away from past experiences of their learning.*
- *Vocabulary focus on Tier 2 and Tier 3 words will be used, emphasised and tested throughout. These are shown more clearly in SOL as too numerous to add here.*

- All GCSE assessments will be past paper/exam style questions

Everything is Design.
Everything!

<u>Paul Rand</u> was an American designer most well-known for his logos. This quote, one of his many, shows that everything is designed – no matter what it is. The homes we live in, the products we buy, the cars we drive, the list goes on and on.