

Autumn Term 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	HALF TERM
Topic	Welcome To Design and Technology	Product Analysis	Revisit fundamentals of working with metal.	Revisit fundamentals of working with metal.	Focused Practical Task (FPT) – Silver Ring.	FPT – Silver Ring	FPT – Silver Ring	FPT – Silver Ring	
Challenge Objective and Content (for all learners)	Introduction to Design and Technology and setting expectations. Product Analysis Task. Challenge: What is product analysis and why is it important?	Continue product analysis lesson. Pupils feedback to group – Oracy skills. Product redesign for new user and exam questions. Challenge: What design features make the product successful or unsuccessful?	Working with Aluminium/ to produce initials. Wastage – sawing, notcher, drilling. Addition – joining methods – pop rivet/ nut & bolts (2) Challenge: What KS3 subject knowledge can you recall and apply independently? Theory: Core principle sources of metals, stock forms. (1)	Working with Aluminium to produce a key tag. Introducing heat. Deforming– annealing, shaping around former, mark making stamping. Finishing techniques Introducing copper and silver. (2) Challenge: What KS3 subject knowledge can you recall and apply independently? Theory: Core principle ferrous and non-ferrous metals (1)	Sizing metal for ring prototype. Cut copper and explore mark making techniques (2) Forming/ deforming/ Joining Challenge: How will you ensure accuracy so that the ring fits the target user? Theory: Core principle shaping metal. Anthropometrics and ergonomics linked to ring sizing. (1)	Revisit knowledge and application of copper clay. Design task – opportunity to apply knowledge for their final ring and identify target user. (2) Challenge: Reflecting on knowledge from making the prototype, what skills will you take forward in order to make a successful ring? Theory: Core principle - casting metal/ modern material metal clay. Benefits of Prototyping.	Introduction to silver. Sizing, sawing, shaping and joining. (2) Challenge: what planned quality assurance and quality control measures can you consider to make sure the ring is a success? Theory: Core principle joining metal (1)	<i>Finishing technique</i> <i>Documentation and evaluation.</i> (2) Challenge: What aspects of your ring have been successful and what would need improving? Theory: surface finishes and treatments (1)	
Inspire Opportunities	Who is the user and how does this effect the design features?	How could this product evolve with the development of new technology?	How could you stretch your knowledge and skills compared to KS3?	How could you stretch your knowledge and skills compared to KS3?	How would you explain the term “working within tolerance”?	What would the impact be of combining copper and silver to make your ring?	What is the impact for a jeweller if the ring is out of tolerance?	What is the impact for a jeweller if the ring is poor quality?	
Assessment Opportunities	Formative and summative feedback will be undertaken by pupils and teacher throughout.		Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	End of project exam paper from Exam Pro	

Autumn Term 2

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Spring Term 1

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Spring Term 2

	Week 1	Week 2	Week 3	Week 4	Week 5	EA
Topic	NEA Mini Project mechanical toy.	NEA Mini Project mechanical toy.	NEA Mini Project mechanical toy.	NEA Mini Project mechanical toy.	NEA Mini Project mechanical toy.	

Challenge Objective and Content (for all learners)	Manufacturing final product. Using CAD CAM or hand tools to make the mechanical toy. (2) Challenge: How will you plan for quality control and quality assurance to ensure that your product is produced to a high standard? Theory: Core principle – finishing techniques for paper and boards. Embossing, varnishing etc.	Manufacturing final product. Using CAD CAM or hand tools to make the mechanical toy. (2) Challenge: How will you plan for quality control and quality assurance to ensure that your product is produced to a high standard? Theory: Core principle – finishing techniques for paper and boards. Embossing, varnishing etc.	Manufacturing final product. Using CAD CAM or hand tools to make the mechanical toy. (2) Challenge: How will you plan for quality control and quality assurance to ensure that your product is produced to a high standard? Theory: Core principle – finishing techniques for paper and boards. Embossing, varnishing etc.	Assembling final product. Exploring and applying finishes (2) Challenge: How will you plan for quality control and quality assurance to ensure that your product is produced to a high standard? Theory: Core principle – Polymers. Sources, stock forms.	Test and evaluate against specification (2) What tests could you complete to judge whether your product is successful? Theory: Core principle. Polymers – shaping, deforming, wastage	
	Inspire Opportunities Is it always important for businesses to sell products which are of a high standard?	Inspire Opportunities Is it always important for businesses to sell products which are of a high standard?	Inspire Opportunities Is it always important for businesses to sell products which are of a high standard?	Inspire Opportunities What finishes could you add which would improve functionality.	Inspire Opportunities What tests occur in industry before a product is reaches its customers?	
	Assessment Opportunities Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Assessment Opportunities Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Assessment Opportunities Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Assessment Opportunities Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Assessment Opportunities End of project exam paper from Exam Pro	

Summer Term 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	HALF TERM
Topic	FPT – Polymer animal	FPT – Polymer animal	FPT – Polymer animal	FPT - Fabric pouch	FPT - Fabric pouch	FPT - Fabric pouch	
Challenge Objective and Content (for all learners)	<i>Introduction to project. Demonstration on how to saw acrylic successfully.</i> Challenge: What properties of plastics can you identify? Theory: Core principle. Polymers – shaping, deforming, wastage. Introduction to heat gun, heat press and strip heater.	<i>Introduction to project. Demonstration on how to finish the edges of the acrylic.</i> Challenge: What properties of plastics can you identify? Theory: Core principle. Polymers – shaping, deforming, wastage	<i>Introduction to project. Demonstration on use the equipment they have learnt about to shape and bend the acrylic into a shape of animal.</i> Challenge: What properties of plastics can you identify? Theory: Core principle. Polymers – shaping, deforming, wastage	<i>Introduction to project. Revisiting the sewing machine. Key functions. How to thread machine and produce a range of stitches with control. (1) Revisiting hand sewing. To sew consistently well and with accuracy. (1)</i> Challenge: How can you use your KS3 knowledge to make progress independently? Theory: Core principle. Textiles . Sources of textiles. Natural and synthetic. Ethics and sustainability.	Introduction to embellishment. Image transfer paper, applique, buttons/ sequins Sample page. (2) Challenge: Will embellishment be a suitable addition to your pouch? Theory: Core principle. Textiles . Woven/ non woven/ knitted	Preparing the components for the pouch. Reinforcing fabric (1) Pinning components. (1) Challenge: How will you ensure that your pouch is being pinned correctly? Theory: Core principle. Textiles. Shaping, addition and wastage. Use of patterns.	
Inspire Opportunities	How do the properties compare to the properties of metal and timber?	How do the properties compare to the properties of metal and timber?	How do the properties compare to the properties of metal and timber?	How could you use hand or machine sewing for decorative purposes?	What is the impact to a manufacture / customer if a pouch is complex and has embellishments?	Which additional components could you plan and include?	
Assessment Opportunities	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	Self and teacher assessment using assessment criteria. Quizzes and exam style questions.	

Summer Term 2

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Topic	Mock Exam Preparation	Smart and modern materials	Launching the new AQA NEA Design Challenges	NEA – Mind map	Year 10 work experience	NEA – Research	
Challenge Objective and Content (for all learners)	<i>Final exam preparation (2)</i> Challenge: Can you name products which are morally or environmentally irresponsible? <i>Theory: People, culture and society. Consumer choice, technology push, market pull etc (1)</i>	Exploring smart and modern materials (3) Challenge: Have smart and modern materials improved our lives? <i>Theory: Sustainability and the environment (1)</i>	<i>Exploring and choosing the contexts. (1)</i> <i>Mind mapping the chosen context (1)</i> Challenge: What criteria will you use to choose the context which suits you the best? <i>Theory: Sustainability and the environment (1)</i>	<i>Mind mapping the chosen context in further detail and identifying a problem to solve (1)</i> Challenge: How will you use ACCESS FM to ensure your mind map is detailed and thorough? <i>Theory: mock exam feedback. (1)</i>		Gathering Primary/ Secondary data linked to the context. (2) Challenge: how can primary and secondary data help a designer to understand a client/ user need? <i>Theory: mock exam feedback. (1)</i>	
Inspire Opportunities	<i>What factors need to be considered when deciding if a product would be successful in a different culture?</i>	<i>What potential do smart and modern materials have in other areas of our lives which haven't been considered already?</i>	<i>Does the context that you have chosen give you the opportunity to stretch and challenge yourself?</i>	<i>Can you identify further questions linked to the project which you need to research further?</i>		<i>How could you gather your own primary data suitable for this project?</i>	
Assessment Opportunities							