

DESIGN AND TECHNOLOGY



ALDER
Community High School

YEAR GROUP 9

Design and Technology 1	Design Ideas	
	<u>Composites</u> •To know what anthropometrics, ergonomics and aesthetics mean •To know that design development plays a crucial role in the final outcome •To know how to work safely within a workshop to prevent hazards and injury •To know how to follow the iterative design process and present high quality design ideas •To know how to develop design ideas through clay and foam modelling •To know how to create an orthographic drawing accurately	<u>Key Vocabulary</u> Ergonomics Anthropometrics Aesthetics Orthographic
	<u>Assessment</u> Design: Students will create a range of design ideas for a pizza cutter handle that are intrinsically linked to ergonomics, anthropometrics and aesthetics using inspiration from their chosen designer Make: Students will make a range of empirical models using clay and Styrofoam to develop their design thinking and create a final pizza cutter handle using timber that successfully use the key principles of ergonomics, anthropometrics and aesthetics. Evaluate: Students will complete an evaluation based on their strengths and weaknesses throughout the project	<u>ILS</u> Using knowledge organisers create: • Flashcards • Knowledge drop • Mind map • Practice key vocabulary definitions
	<u>How to help at home</u> • Discuss how products are designed to fit different users.	<u>Wider reading</u> • Research anthropometrics and ergonomics in product design.



	- Encourage students to identify examples of ergonomics and aesthetics in everyday products. - Practise sketching objects using front, side and plan views. - Support revision of key vocabulary using flashcards. - Encourage students to explain how their designs have developed over time. - Discuss why testing and modelling are important before manufacturing.	- Explore examples of successful product design and analyse why they work. - Read about the iterative design process used by professional designers. - Investigate how prototypes and models are used to test ideas. - Research orthographic drawing and technical communication.
	SMSC Social: Working collaboratively, sharing ideas and giving constructive feedback during design activities. Moral: Understanding personal responsibility for safe working practices and respecting workshop rules. Spiritual: Developing creativity, confidence and resilience through designing, modelling and problem-solving. Cultural: Exploring how products are designed to meet the needs of different users, cultures and societies.	Careers Links Product Designer Industrial Designer Design Engineer Ergonomics Specialist CAD Technician Architect Mechanical Engineer Manufacturing Engineer Model Maker Design & Technology Teacher
Design and	Pizza Cutter Project	
	Composites - To know that anthropometrics and ergonomics has an impact on the potential user - To know how to use tools and equipment safely and independently - To know how to behave in a workshop and identify hazards - To know how to use the hot wire cutter effectively - To know how to adapt and change the outcome according to feedback	Key Vocabulary Ergonomics Anthropometrics Aesthetics Orthographic
	Assessment	ILS Using knowledge organisers create:



Design: Students will create a range of design ideas for a pizza cutter handle that are intrinsically linked to ergonomics, anthropometrics and aesthetics using inspiration from their chosen designer Make: Students will make a range of empirical models using clay and Styrofoam to develop their design thinking and create a final pizza cutter handle using timber that successfully use the key principles of ergonomics, anthropometrics and aesthetics. Evaluate: Students will complete an evaluation based on their strengths and weaknesses throughout the project	• Flashcards • Knowledge drop • Mind map Practice key vocabulary definitions
<u>How to help at home</u> • Discuss how kitchen products are designed for comfort and ease of use. • Encourage students to evaluate products they use at home and suggest improvements. • Support revision of key vocabulary through flashcards and quizzes. • Discuss the importance of responding to feedback when improving designs. • Encourage students to explain how ergonomics affects product design. • Reinforce the importance of safe working practices.	<u>Wider reading</u> • Research how designers use anthropometric data when designing products. • Explore examples of ergonomic kitchen tools and utensils. • Read about prototyping and product testing in industry. • Investigate the role of user feedback in product development. • Research the safe use of specialist equipment in manufacturing environments.
<u>SMSC</u> Social: Collaborating with others and sharing feedback respectfully to improve outcomes. Moral: Taking responsibility for safe behaviour and following workshop procedures. Spiritual: Developing perseverance and confidence through refining and improving designs. Cultural: Understanding how products are adapted to meet the needs and preferences of different users around the world.	<u>Careers Links</u> Product Designer Industrial Designer Design Engineer Ergonomist Manufacturing Engineer CAD Technician Mechanical Engineer Prototype Technician Workshop Technician



		Quality Control Inspector Design & Technology Teacher Project Manager
--	--	---