

## Year 8 Learning Maps – Design Technology Rotation

Gadget of the Future				
<b>Prior Learning</b> This topic builds on technology delivered in primary school and Year 7, looking at new technologies that are emerging and how these can be used in new products. Knowledge will be developed to enhance both research and practical CAD skills.		<b>Current Learning</b> In this project students will develop skills within CAD software and designing an innovative product, incorporating new and emerging technologies. Students will use Google Sketch Up to do this. They will undertake research into the new and emerging technologies to date, using the internet and books. They will then use their research to design their own product that incorporates a new technology before creating the design using CAD software. They will then pitch their product to their peers.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices when applying new technologies and how they can make a product successful.  They will recognise the importance of research in helping them to make informed decisions, which is an essential skill for future success in DT.
Lesson Sequencing		Tier 3 Vocabulary	Wider Reading Opportunities	Ways in which parents/carers can support
Lesson 1	Research into New Technologies	Creativity Innovation Emerging Technological Advancement Composites Computer Aided Design (CAD) Computer Aided Manufacture (CAM) Smart Material	<a href="#">15 New technologies of 2020</a>  <a href="#">New and Emerging Technologies</a>  <a href="#">10 Breakthrough Technologies of 2020</a>	Choose 5 products from around the home and think about how you could enhance that product but applying a new and emerging technology to it.
Lesson 2	Research into New Technologies			
Lesson 3	Development			
Lesson 4	Google Sketch Up			
Lesson 5	Composite materials			
Lesson 6	Google Sketch Up			
Lesson 7	Sales pitch/Google Sketch Up			
Lesson 8	Dragons Den			
Lesson 9	Dragons Den			

<b>Light Project</b>				
<b>Prior Learning</b> This topic builds on technology delivered in Year 7 using wood and plastic to manufacture a light for the company Habitat. Knowledge will be developed to enhance both research and practical skills.		<b>Current Learning</b> In this project students will develop CAD/CAM skills whilst manufacturing a light independently, carrying out a range of quality control checks to ensure a high quality product is produced. Students will use the following equipment to manufacture the Light: 2D design, laser cutter, coping saw, Tenon saw, pillar drill, hole saw. They will undertake some research focusing on the ACCESSFM analysing tool to analyse current lights that Habitat sell.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices in the future, when manufacturing using CAD/ CAM.  They will recognise the importance of analysing products in helping them to make informed decisions, which is an essential skill for future success in DT.
<b>Lesson Sequencing</b>		<b>Tier 3 Vocabulary</b>	<b>Wider Reading Opportunities</b>	<b>Ways in which parents/carers can support</b>
Lesson 1	Brief, Product analysis	Product Analysis ACCESSFM Pine Polypropylene Laser Cutter 2D design Exploded Views Quality Control Templates Designers	CGP Books - KS3 Science Workbook - Levels 3-7: Materials and Their Properties Workbook  <a href="http://technologystudent.com">COMPUTER AIDED DESIGN AND COMPUTER AIDED MANUFACTURE (technologystudent.com)</a>  <a href="http://technologystudent.com">3D Computer Design and Manufacture (technologystudent.com)</a>	Download some free CAD software at home e.g Google Sketch Up. Practice drawing objects in the home.  Look at different products around the home and discuss how these have been made.
Lesson 2	Research, product analysis			
Lesson 3	Exploded views			
Lesson 4	Practical			
Lesson 5	Practical			
Lesson 6	Practical			
Lesson 7	Practical			
Lesson 8	Practical			
Lesson 9	Practical/ improvements			

<b>Maze Project</b>				
<b>Prior Learning</b> This topic builds on technology delivered in Year 7 using wood and different joints to manufacture a maze game. Knowledge will be developed to enhance both evaluative and practical skills.		<b>Current Learning</b> In this project students will develop wood working skills whilst manufacturing a maze independently, carrying out a range of quality control checks to ensure a high quality product is produced.  Students will use the following equipment to manufacture the maze: mitre saw, Tenon saw, belt clamp, files, dowel, bench hook, PVA, electric drill etc. Once manufactured students will evaluate their final product.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices in the future, when manufacturing using wood.  They will recognise the importance of evaluating products once they have been manufactured to make further improvements. This is an essential skill that students will develop as they progress through their DT studies.
<b>Lesson Sequencing</b>		<b>Tier 3 Vocabulary</b>	<b>Wider Reading Opportunities</b>	<b>Ways in which parents/carers can support</b>
Lesson 1	Wood Joints	Quality Control Quality Assurance Tolerances Standard Components Mitre Saw Belt Clamp Bench hook Evaluation Wood Joints Electric drill	<a href="http://technologystudent.com">Finger Joints (technologystudent.com)</a>  <a href="http://technologystudent.com">Halving Joints, Bridle Joints, Mortise and Tenon Joints (technologystudent.com)</a>  <a href="http://technologystudent.com">Hand Files / Engineers Files - 1 (technologystudent.com)</a>  CGP Books - KS3 Science Workbook - Levels 3-7: Materials and Their Properties Workbook	Look at different wooden products around the house and discuss the different joining methods.  Look at different tools around the home and identify the correct name and function.
Lesson 2	Standard components/ Practical			
Lesson 3	Practical			
Lesson 4	Practical			
Lesson 5	Practical			
Lesson 6	Practical			
Lesson 7	Practical			
Lesson 8	Practical			
Lesson 9	Evaluation			

<b>Sustainability Project</b>				
<b>Prior Learning</b> This topic builds on technology delivered in Year 7 using the design process to manufacture five identical useful products as a team. Knowledge will be developed to enhance both designing and teamwork skills.		<b>Current Learning</b> In this project students will work as a team to design and manufacture five identical products made from waste materials. Students will also develop their knowledge on social and moral issues related to the environment. Within the group, students will be allocated one of the following roles: Designer, Graphic Designer and Researcher, Team Leader & Manufacturer.  Students will undertake a group presentation to the class showcasing their ideas using an A1 display board that they have produced.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices in the future, particularly about the amount of energy and materials they use. They will recognise the importance of saving the planet and lowering our everyday carbon footprint which there is an ever-growing need for in DT.
<b>Lesson Sequencing</b>		<b>Tier 3 Vocabulary</b>	<b>Wider Reading Opportunities</b>	<b>Ways in which parents/carers can support</b>
Lesson 1	Research	3R's	<a href="http://technologystudent.com">Our Carbon Footprint (technologystudent.com)</a>  <a href="http://technologystudent.com">How can we reduce or Carbon Footprint? -1 (technologystudent.com)</a>  <a href="http://technologystudent.com">Carbon Reduction Labels/Symbols - 1 (technologystudent.com)</a>	Discuss ways as a household how you can reduce your carbon footprint.  Redesign your home to make it more eco- friendly.
Lesson 2	Research / ideas	Fairtrade		
Lesson 3	Life cycle assessment	Scales of production		
Lesson 4	Group work practical	Social Footprint		
Lesson 5	Group work practical	Life Cycle Assessment		
Lesson 6	Renewable/ no renewable resources	Renewable resources		
Lesson 7	Group work practical	Sustainability		
Lesson 8	Group work practical	Batch Production		
Lesson 9	Group presentations	Energy		
		Carbon footprint		

The Eat Well Guide				
<b>Prior Learning</b> This topic builds on technology delivered in primary school on healthy eating and the importance of staying fit. Knowledge will be developed on The Eat Well Guide and the key components of a balanced diet.		<b>Current Learning</b> In this project students will learn about the importance of a healthy and balanced diet. Students will learn about specific diet-related diseases and ways that making small lifestyles changes can impact upon these. Students will learn about dietary and physical activity recommendations.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices when planning meals, shopping for ingredients and preparing and cooking dishes.  They will recognise the impact of diet and exercise on their health and possibly make wiser choices as a result. Students will be able to adapt recipes and cook a range of dishes.
Lesson Sequencing		Tier 3 Vocabulary	Wider Reading Opportunities	Ways in which parents/carers can support
Lesson 1	Introduction and protein theory	Nutrition Nutrients Energy Carbohydrates Fat Protein Vitamins Minerals Deficiency Excess	Kids' Fun & Healthy Cookbook by Nicola Graimes  The Need to Know Guide to Nutrition and Healthy Eating by Tim Shaw Bsc Msc  <a href="http://www.nhs.uk">The Eatwell Guide - NHS (www.nhs.uk)</a>  <a href="#">Malnutrition - Nutrition, digestion and excretion - KS3 Biology - BBC Bitesize - BBC Bitesize</a>	Leisure time: Food programmes such as 'Inside the Factory', 'Supersize vs Super Skinny', 'The Great British Bake-Off' and 'Eat Well for Less'.  Shopping: Challenge your child to read food labels and explain what they mean. Let them support with the shopping, challenging them to choose healthier options and explain alternative ingredients.  Dinner time: Support your child in planning and preparing dinner for the family using the Eat Well Guide to ensure it is balanced and healthy.
Lesson 2	Moroccan mince practical			
Lesson 3	Fruit and vegetables theory			
Lesson 4	Frittata practical			
Lesson 5	Scone roll-ups practical			
Lesson 6	KAP evaluation			
Lesson 7	Improvements/DIRT			
Lesson 8	Banana muffins practical			
Lesson 9	Bread practical			

Special Diets				
<b>Prior Learning</b> This topic builds on technology delivered in primary school on healthy eating. Knowledge will be developed on how to use The Eat Well Guide and the key components to create a balanced diet.		<b>Current Learning</b> In this project students will learn about special diets including reasons for these, how this affects an individual, foods that may need to be avoided/restricted, nutritional implications of dietary restrictions and healthy food alternatives.		<b>Subsequent Learning</b> This topic will prepare students to make informed choices when planning meals, shopping for ingredients and preparing and cooking dishes.  They will recognise the impact of diet and exercise on their health and possibly make wiser choices as a result. Students will be able to adapt recipes and cook a range of dishes.
Lesson Sequencing		Tier 3 Vocabulary	Wider Reading Opportunities	Ways in which parents/carers can support
Lesson 1	Introduction to special diets	Medical Ethical Religion Diabetes Obesity Heart Disease Deficiency Life Stages Allergy Intolerance	<a href="#">Factors influencing special diets - Special diets - GCSE Hospitality (CCEA) Revision - BBC Bitesize</a>  <a href="#">Nutrients - Diet - KS3 Biology Revision - BBC Bitesize</a>	Leisure time: food programmes such as 'Inside the Factory', 'Supersize vs Super Skinny', 'The Great British Bake-Off' and 'Eat Well for Less'.  Shopping: challenge your child to read food labels and explain what they mean. Let them support with the shopping, challenging them to choose healthier options and explain alternative ingredients.  Dinner time: support your child in planning and preparing dinner for the family that takes into a type of special diet.
Lesson 2	Special diets theory 1			
Lesson 3	Cheesecake practical			
Lesson 4	Lasagne practical			
Lesson 5	Special diets theory 2			
Lesson 6	Cinnamon scones			
Lesson 7	Improvements			
Lesson 8	Pesto bread twists			