



## RGS Design Technology Course Summary 2015-2016

	First Form		Second Form		Third Form
<b>Project I</b>  11 Weeks	<b>Box Project</b> <ul style="list-style-type: none"> <li>• Health &amp; Safety</li> <li>• Introduction to Tools &amp; Machinery</li> <li>• Research focus on Hardwoods/Softwoods/Manufactured Board.</li> <li>• Research focus on Thermo/Thermoset Plastics</li> <li>• Focus on good workshop practice</li> <li>• Wood Jointing</li> <li>• CAD/CAM in Industry</li> </ul>	<b>Project I</b>  11 Weeks	<b>Introduction to Graphics</b> Drawing Techniques: <ul style="list-style-type: none"> <li>• Isometric</li> <li>• 1 &amp; 2 Point Perspective</li> <li>• Freehand Sketching</li> <li>• Rendering</li> </ul> CAD <ul style="list-style-type: none"> <li>• Introduction into 3D Idea creation using Solidworks</li> <li>• Introduction to Photoshop</li> <li>• 2D Design</li> </ul> CAM <ul style="list-style-type: none"> <li>• Manufacture using Laser/3D Printer</li> </ul>	<b>Project I</b>  1 <sup>st</sup> Term	<b>Concept Design</b> <ul style="list-style-type: none"> <li>• Design Concepts</li> <li>• Form v Function</li> <li>• Research Techniques (Advanced)</li> <li>• Free Drawing</li> <li>• Design Innovation</li> <li>• Modelling Techniques</li> <li>• Focus on Materials</li> <li>• Introduction to Presentation</li> <li>• 'Dragons Den' style pitch.</li> </ul> <b>CAD – Introduction to SolidWorks Modelling</b> <b>Enterprise Project</b> <ul style="list-style-type: none"> <li>• Christmas Theme</li> <li>• Group Work</li> <li>• CAD/CAM</li> <li>• Business Plan</li> </ul>
				<b>Project 2</b>	

<p><b>Project 2</b></p> <p>11 Weeks</p>	<p><b>Natural Form</b></p> <ul style="list-style-type: none"> <li>• Primary &amp; Secondary Research</li> <li>• Introduction in Ferrous/Non Ferrous /Alloys</li> <li>• Specification Content</li> <li>• Designing using Natural Form influences</li> <li>• Manufacture using sheet metal.</li> <li>• Use of CAD/CAM</li> <li>• Manufacture using Casting process &amp; Enamelling</li> <li>• Evaluation Techniques Introduction</li> </ul>	<p><b>Project 2</b></p> <p>11 Weeks</p>	<p><b>Design Time</b></p> <ul style="list-style-type: none"> <li>• Focussed Research (Famous Designers)</li> <li>• Design Innovation</li> <li>• Sketching/Isometric/Orthographic/Exploded</li> <li>• Manufacture using range of materials and focus on properties of materials.</li> <li>• CAD/CAM (Laser Cutting/Vinyl Cutter)</li> </ul> <p>Evaluation (Advanced)</p>	<p><b>Project 3</b></p> <p>2<sup>nd</sup> Term</p> <p><b>Project 4</b></p>	<p><b>Stack &amp; Store</b></p> <ul style="list-style-type: none"> <li>• CAD/CAM</li> <li>• Joining Methods</li> <li>• Working to Tolerances</li> <li>• Design Development</li> </ul> <p><b>CAD</b> – Development in SolidWorks</p> <p><b>Weather Vain</b></p> <ul style="list-style-type: none"> <li>• Metal work</li> <li>• Brazing/Welding</li> <li>• Forging</li> <li>• Heat Treatment</li> <li>• Graphic Advertising</li> </ul>
<p><b>Project 1</b></p> <p>11 Weeks</p>	<p><b>Food &amp; Nutrition 1<sup>st</sup> Form</b></p> <p>Getting The Balance Right</p> <ul style="list-style-type: none"> <li>-Eat Well plate v nutrition</li> <li>-Vegetarianism</li> <li>-Neuroscience</li> <li>-Basic Practical Skills</li> </ul>	<p><b>Project 3</b></p> <p>11 Weeks</p>	<p><b>Food and Nutrition 2<sup>nd</sup> Form</b></p> <p>Survival Guide To Food</p> <ul style="list-style-type: none"> <li>- Micro-organisms</li> <li>- HACCP</li> <li>- Labelling &amp; the law</li> <li>- Packaging – Design a net using Serif Page Plus</li> <li>- Additives</li> <li>-Current Food Trends</li> </ul>	<p><b>Project 5</b></p> <p>3<sup>rd</sup> Term</p>	<p><b>Laminating Project</b></p> <ul style="list-style-type: none"> <li>• Woodwork</li> <li>• Forming Materials</li> <li>• Changing properties</li> <li>• Design Development</li> </ul>

## GCSE Design Technology

	Fourth Form	Fifth Form
Project 1 11 Weeks	<p><b>Theory</b></p> <p><b>Developing, Planning &amp; Communicating Ideas</b></p> <ul style="list-style-type: none"> <li>Brief &amp; Specification</li> </ul> <p><b>Product Analysis</b></p> <p><b>Sustainability &amp; Legislative Issues</b></p> <ul style="list-style-type: none"> <li>Six 'R's'</li> <li>BSI, CEN, ISO</li> </ul> <p><b>Designers/Practitioners</b></p> <ul style="list-style-type: none"> <li>Research Jonathan Ive &amp; Vernor Panton</li> </ul> <p><b>Commercial Manufacturing Practises</b></p> <ul style="list-style-type: none"> <li>Types of Manufacture</li> <li>Consumer Protection</li> <li>Flat Pack Furniture</li> <li>The Purpose of Packaging</li> </ul> <p><b>Materials &amp; Components</b></p> <ul style="list-style-type: none"> <li>Wood/Metal/Plastic/Card/Paper</li> <li>Commercial Packaging Materials</li> <li>Control Components</li> <li>Micro &amp; Nano Technology</li> <li>Composites</li> </ul>	<p><b>Theory</b></p> <p><b>Tools, Equipment &amp; Manufacture</b></p> <ul style="list-style-type: none"> <li>Accuracy &amp; Precision</li> <li>Correct choice of Tools</li> </ul> <p><b>Manufacture</b></p> <ul style="list-style-type: none"> <li>Plan for Manufacture</li> <li>3D Modelling</li> <li></li> </ul> <p><b>ICT &amp; CAD/CAM</b></p> <ul style="list-style-type: none"> <li>Word Processing/Spreadsheets/ Presentations</li> <li>Vector &amp; Rastor</li> </ul> <p><b>Systems &amp; Processes</b></p> <ul style="list-style-type: none"> <li>Flow Diagrams</li> <li>Microprocessors</li> <li>CAM for increase accuracy and repeatability</li> <li>Wasting/Reforming/Deforming/ Fabricating</li> </ul>
Project 2 11 Weeks	<p><b>Introduction into WJEC Product Design Course</b></p> <p><b>Portfolio</b></p> <ul style="list-style-type: none"> <li>Analysis of the Task</li> <li>Specification</li> <li>Generation of Ideas</li> <li>Development &amp; Modelling</li> <li>Final Solution – Graphical Presentation</li> <li>Final Solution – Technical Details</li> <li>Creative Thinking</li> </ul> <p><b>Manufacture</b></p> <ul style="list-style-type: none"> <li>Plan for Manufacture</li> <li>Manufacture, Difficulty, Quality, Accuracy, Finish</li> <li>Evaluation</li> <li>Modification</li> </ul>	<p><b>Final Project</b></p> <p><b>Portfolio</b></p> <ul style="list-style-type: none"> <li>Analysis of the Task</li> <li>Specification</li> <li>Generation of Ideas</li> <li>Development &amp; Modelling</li> <li>Final Solution – Graphical Presentation</li> <li>Final Solution – Technical Details</li> <li>Creative Thinking</li> </ul> <p><b>Manufacture</b></p> <ul style="list-style-type: none"> <li>Plan for Manufacture</li> <li>Manufacture, Difficulty, Quality, Accuracy, Finish</li> <li>Evaluation</li> <li>Modification</li> </ul>

## GCSE Food Technology

Food Technology 4 <sup>th</sup> Form	Food Technology 5 <sup>th</sup> Form
<b>Autumn</b> <ul style="list-style-type: none"><li>- Nutrition</li><li>- Functions of ingredients, taught through experimentation work</li><li>- Micro-organisms</li><li>- Practicals related to both of the above, incorporating a variety of skills</li></ul>	<b>Autumn</b> <ul style="list-style-type: none"><li>- Coursework</li><li>- Double lessons - assessed practicals</li></ul>
<b>Spring</b> <ul style="list-style-type: none"><li>- Continue with functions of ingredients based on experimental work</li><li>- Practicals move towards designing and gathering of ideas</li><li>- finishes with a design brief task based on farmers markets</li></ul>	<b>Spring</b> <ul style="list-style-type: none"><li>- Submit controlled assessment (January)</li><li>- Complete specification (1 month)</li><li>- Revision guided</li></ul>
<b>Summer</b> <p>1<sup>st</sup> half</p> <ul style="list-style-type: none"><li>- Food safety and the law</li><li>- Additives, labelling, packaging, systems &amp; control</li></ul> <p>2<sup>nd</sup> half</p> <ul style="list-style-type: none"><li>- Begin GCSE Controlled assessment</li></ul>	<b>Summer</b> <ul style="list-style-type: none"><li>- Revision</li></ul>

## A-level Product Design

	Sixth Form	Seventh Form
Project 1 11 Weeks	<p><b>Theory</b></p> <p><b>Designing &amp; Innovation</b></p> <ul style="list-style-type: none"> <li>Principles</li> <li>Research</li> <li>Analysis of Problem</li> <li>Ergonomics</li> <li>Innovation</li> <li>Design Detail</li> </ul> <p><b>Product Analysis</b></p> <ul style="list-style-type: none"> <li>Production Method</li> <li>Form v Function</li> <li>Trends/Styles/Fashions</li> </ul> <p><b>Materials &amp; Components</b></p> <ul style="list-style-type: none"> <li>Materials, Components &amp; potential application</li> <li>Working Characteristics of materials</li> <li>Modern material Tech.</li> <li>Choosing Materials</li> <li>Components &amp; Application</li> </ul> <p><b>Industrial &amp; Commercial Practices</b></p> <ul style="list-style-type: none"> <li>Employment &amp; Commercial Practises</li> <li>Manufacturing Systems</li> <li>Stages of Production</li> <li>Detailed Manufacture Methods</li> <li>Management Systems</li> <li>Safe Working Practises</li> </ul>	<p><b>Theory</b></p> <p><b>Human Responsibility</b></p> <ul style="list-style-type: none"> <li>Customer &amp; Legal Requirements</li> <li>Legislative Frameworks</li> <li>Risk Assessment</li> <li>Values Implicit in Product Design</li> <li>Forms of Energy Used.</li> </ul> <p><b>Public Interaction – Marketing</b></p> <ul style="list-style-type: none"> <li>Innovation in the Market</li> <li>Researching the Market</li> <li>Selling the Product</li> <li>Diffusion of Products</li> <li>Influences on Design</li> </ul> <p><b>Processes</b></p> <ul style="list-style-type: none"> <li>Hand Methods of Preparation, Processing &amp; Manipulating Materials</li> <li>Machine Methods of Preparation, Processing &amp; Manipulating Materials</li> <li>Combining Materials to Enhance</li> <li>Computer Aided Manufacture</li> </ul> <p><b>Production Systems &amp; Control</b></p> <ul style="list-style-type: none"> <li>Use of Systems/Sub-Systems for Manufacture Management</li> <li>Control Systems</li> <li>Use of ICT in Industry</li> </ul>
Project 2 11 Weeks	<p><b>AS Project Portfolio</b></p> <ul style="list-style-type: none"> <li>Product Analysis &amp; Research</li> <li>Developing a Specification</li> <li>Generating &amp; Developing Ideas</li> <li>Detail Designing</li> <li>Evaluating &amp; Decision Making</li> <li>Communication &amp; Key Skills</li> </ul> <p><b>Manufacture</b></p> <ul style="list-style-type: none"> <li>Planning for Manufacture</li> <li>Selecting &amp; Testing Materials &amp; Processes</li> <li>Use of Materials &amp; Processes</li> <li>Accuracy, Quality and Finish</li> <li>Functionality &amp; Innovation</li> </ul>	<p><b>A2 Portfolio</b></p> <ul style="list-style-type: none"> <li>Analysis, Research &amp; Developing a Design Specification</li> <li>Generating &amp; Developing Innovative Ideas &amp; Proposals</li> <li>Details Designing</li> <li>Graphic Communication &amp; Key Skills</li> </ul> <p><b>Manufacture</b></p> <ul style="list-style-type: none"> <li>Planning for Making</li> <li>Range and Sophistication of Manufacture Skills</li> <li>Accuracy, Quality and Finish</li> <li>Functionality &amp; Innovation</li> </ul>