# Domain Knowledge and Skills Year 12

| **Year 12** ***(in addition to Year 11)*** | **Food** | **Fabric** | **Metal** | **Wood** | **Electronics/Wood** |
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| Measuring | Weighing and measuring ingredients correctly:<br>*Scales*<br>*Measuring jugs*<br>*Measuring spoons* | Advanced measurement and calculation for pattern drafting purposes | Marking out materials for further processing<br><br>Measuring to agreed tolerances.<br><br>Selecting and using marking out tools safely | Use of face marks / edge marks.<br><br>Measuring to agreed tolerances.<br><br>Selecting and using marking out tools safely | Ohms Law.<br>Use of a multimeter to measure values.<br>Ability to measure resistance, capacitance, voltage, current.<br>Measuring performance characteristics of products/system.<br>Use of an Oscilloscope.<br>Measure to identify faults on circuits. |
| Safe and correct use of tools/equipment | Presentation of food on a plate<br>*Garnishing*<br>Labelling and packaging a food product for target market | Pattern Drafting Equipment | Use equipment/ tools correctly and safely.<br>*Cutting and shaping hand tools. Portable electric tools and machines (as per Technology workshop safety document).*<br>Welding processes<br>*-Brazing*<br>*-Braze welding*<br>*-Fusion welding*<br>*-Electric arc and M.I.G*<br>*- Knowledge of T.I.G*<br>*-Plasma cutting* | Use equipment/ tools correctly and safely.<br><br>*Cutting and shaping hand tools. Portable electric tools and machines (as per Technology workshop safety document).* | Ability to use electronic hand tools.<br><br>Use of correct soldering techniques.<br><br>Use of a P.C.B. Tank to produce a circuit board<br><br>Appropriate selection and use of testing equipment. |

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| Materials Selection | Ability to use equipment correctly<br>*electric equipment*<br>*hobs/ovens*<br>*knives/utensils*<br>*cooking equipment*<br><br>Ability to select appropriate tool for the task | Classification of Fibres<br>Yarn and Fabric<br>Construction in relation to performance<br>Performance properties of natural and manmade fabrics and how they apply to the outcome<br>How surface decoration can effect the performance of the outcome | Selecting and using materials as based on their properties including: their ability to be shaped, machined and joined<br><br>Evaluate materials for suitability for application – justify why they have been selected for use | Understand the properties of materials used; eg. Manufacture boards/ timber/ Plastics/ etc.<br><br>Evaluate materials for suitability for application – justify why they have been selected for use | Identify component symbols.<br>Understand the function of components and how they are catergorised, e.g. electrolytic, ceramic.<br>Identify the values of components e.g. resistors and capacitors, IC's.<br>Select the appropriate component from a suppliers catalogue.<br>Cost out the unit price of components.<br>Identify components into Inputs, Processes and Outputs.<br>Appropriate selection of microcontrollers for their function and application. |
| Techniques | In relation to specified needs e.g. *high energy needs, vegetarianism,* students will:<br>Understand the functions of ingredients to give desired:<br>*-appearance*<br>*-aroma*<br>*-texture*<br>*-flavour/taste*<br>Understand the nutritional qualities of food<br>Understand the effects of processing on food<br>Understand the requirements for labelling and packaging<br>Understand effects of advertising and marketing | Fashion drawing including fabric representation<br>*Basic Block Construction (bodice, t shirt and skirt)*<br>*Pattern development from basic block*<br>*Trialling and Fitting*<br>*Trialling, selection and execution of advanced skills*<br>*Screen Printing*<br>*Machine Embroidery*<br>*Fabric Embellishment* | Manipulation and fabrications of metals<br><br>Jointing including: *corner*, b*utt*, f*illet*, l*ap*<br><br>Fitting techniques.<br><br>Justify the selection of techniques | Understand jointing and assembly methods; *Butt, housing, mitre, lap, dowel, flat pack.*<br>*Adhesives, Hardware, Fastenings.*<br><br>Work to agreed tolerances.<br><br>Justify the selection of techniques | Use of Breadboards to model and test.<br><br>Modelling of circuits and PCB layouts, eg. croc. clips and eagle.<br><br>Techniques to packaging electronics, eg. Jointing, mounting of circuit boards.<br><br>Vacuum Forming mould making.<br><br>Vacuum forming process.<br><br>I/O Interfacing to microcontrollers. |

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| Finishing/Presentation<br><br>Codes of Practice | Food preparation, cooking, presentation, storage<br>Food testing<br>Sensory testing – ranking<br>*hedonic scale, triangle testing*<br>Students are able to select and carry out the appropriate sensory test.<br>Storage, preparation, cooking, reheating of food safely<br>Safe personal hygiene practices<br>Safe and hygienic practice in the foods room<br>HACCP<br>Quality control<br>Labelling and packaging standards | Quality Control measures to produce quality outcomes throughout construction<br><br>Copyright Law<br>Consumer Guarantees Act | Preparing materials for finishing.<br><br>Understand finishing techniques used.<br><br>Correct and safe application of the chosen finishing methods to agreed specs.<br><br>Safe use of tools and equipment at this level related. | Preparing materials for finishing.<br><br>Understand finishing methods<br>*Lacquer*<br>*Staining*<br>*Polishing – Oils*<br>*Painting*<br><br>Correct and safe application of the chosen finishing methods to agreed specification.<br><br>Safe use of tools and equipment at this level related.<br>Accountability copyright laws | Material finishing for casing and packaging.<br><br>Appropriateness of products presentation into its intended environment. |
| *Commercial practice* | Understands commercial processes and techniques used to manufacture products | Understands commercial practices used in the fashion industry | Safe use of tools and equipment at this level related. | Safe use of tools and equipment.<br>Copy right laws, accountability. | Understands commercial processes and techniques used to manufacture products |
| *Historical and future trends*<br>*(national and global)* | Appreciates the contribution that historical products had on those current.<br><br>Ability to project to likely future products that address similar needs/opportunities | Recognises historical and social influences on fashion<br><br>Considers future viability of own product | Appreciates the contribution that historical products had on those current.<br><br>Considers future viability of own product | Appreciates the contribution that historical products had on those current.<br>Ability to reflect and project to likely future developments/production in different circumstances e.g. mass production | Appreciates the contribution that historical products had on current product.<br><br>Ability to anticipate where current products will ‘end up’ in the short, medium and long term.<br>Ability to predict the lifespan of a product on the market. |