GRACE COLLEGE **Curriculum Outline Year 9** **Technology**

| Year 9 Curriculum Intent |
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| Students will be able to combine graphical and practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. We want them to be able to reflect on and evaluate past and present technology, its uses and impacts and, wherever possible, to link their work to other disciplines such as mathematics, science, engineering, computing and art. |

| Year 9 Curriculum Overview | | | | |
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| Topic 1 | Topic 2 | Topic 3 | Topic 4 | Topic 5 |
| CAD | Food | Mechanisms | Polymers | Design and Make |
| **Key Question** | | | | |
| How can CAD be used in industry in the role of an architect? | What are the 12 skill groups that need to be applied and combined to achieve a range of practical outcomes and use when making food products in future? | What are mechanisms and how do they help us in everyday life? The difference between gears and pulleys. How are they used and why? | How are polymers created from the primary source to the stock forms? | What is a specification ? How can we develop ideas based on the work of others ? How can we create effective prototypes ? |
| **Key Vocabulary** | | | | |
| 1. Computer Aided Design<br>2. Simulate<br>3. Render<br>4. Model<br>5. Millimetres<br>6. Architect | 1. Setting<br>2. Residual Heat<br>3. Raising agent<br>4. Fermentation<br>5. Tenderise<br>6. Coagulation | 1. Rotary<br>2. Linear<br>3. Reciprocating<br>4. Oscillating<br>5. Cam<br>6. Linkage | 1. Polymers<br>2. Thermoforming<br>3. Thermosetting<br>4. Repeat process<br>5. Permanently<br>6. Recycle | 1. Alessi<br>2. Form<br>3. Function<br>4. Modelling<br>5. Iterative design<br>6. Prototype |

GRACE COLLEGE
# CORE KNOWLEDGE

## Year 9 – Technology

| | The knowledge you will need to recall: | How you will apply this knowledge: | **This links to:** |
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| **1** | • The principles of CAD The advantages and disadvantages of using CAD<br>• Examples of how and why CAD is used by industry.<br>• The basic and moderate skills to create outcomes using CAD<br>• The work of key designers<br>• How to create a brief and specification<br>• The basic and moderate skills to create outcomes using CAD meeting the criteria of a brief and specification<br>• The process evaluating CAD outcomes. | • Pupils will apply their knowledge to short recall and extended question.<br>• Pupils will use their knowledge and skills to create three sketch-up tasks<br>• Pupils will use their knowledge and skills to research key designers<br>• Pupils will use their knowledge to create a brief and specification<br>• Pupils will use their knowledge and skills to create their CAD outcome<br>• Pupils will use their knowledge to refine and evaluate their CAD outcome | This unit uses the foundational knowledge and skills developed in year 7 and 8 to be further developed. This unit provides the knowledge and skills to be further developed in our GCSE DT course in year 10. |
| **2** | • The 12 technical skills groups<br>• The processes that are involved with each technical skill.<br>• How to use the 12 technical skills to create different dishes.<br>• Why the skills demonstrated are used to help create the dish. | • Pupils will apply their knowledge to short recall extended writing questions.<br>• Pupils will use their knowledge of the 12 technical skills to create certain dishes.<br>• Pupils will use their knowledge of where and why the 12 technical skills were used in the different recipes. | This unit uses the foundational knowledge and skills developed in year 7 and 8 to be further developed. This unit provides the knowledge and skills to be further developed in our GCSE Food course in year 10. |
| **3** | • The different levers used<br>• The processes that are involved with each gear and cam.<br>• How CAMs are used to create movement in design and products.<br>• How to use tools and equipment safely to create a product that meets the criteria given. | • Pupils will apply their knowledge to short recall extended writing questions.<br>• Pupils will use their knowledge of mechanisms to create Lego models<br>• Pupils will use their knowledge of where and why we us mechanisms.<br>• Pupils with make a model using levers, gears and cams | This unit uses the foundational knowledge and skills developed in year 7 and 8 to be further developed. This unit provides the knowledge and skills to be further developed in our GCSE DT course in year 10. |
| **4** | • The basic principles of where polymers come from.<br>• The different categories of polymers.<br>• The basic principles of working safely in a woodwork room.<br>• The basic principles of using tools and equipment safely. | • Pupils will apply their knowledge to short recall extended writing questions.<br>• Pupils will use their knowledge of polymers and create a piece of jewellery.<br>• Pupils will use their knowledge of the refine and test process to review their product against the original specifications.<br>• Pupils will use their knowledge to create parts by hand and by CAM. | This unit provides the foundational knowledge and skills learnt in Year 7 CAD CAM unit and year 8 mood light and design movements unit. It also prepares the students for GCSE Design and Technology. |
| **5** | • The definition of a Designer<br>• The principles of Alessi design company.<br>• How to create models to help finalise a design.<br>• The basic principles of working safely in a woodwork room.<br>• The basic principles of using tools and equipment safely. | • Pupils will apply their knowledge to short recall extended writing questions.<br>• Pupils will use their knowledge of the Alessi to produce a product that meets the brief and specification given to them.<br>• Pupils will use their knowledge of working with timbers and boards to produce products that demonstrate their mastery of materials and equipment | This unit builds on foundational skills acquired in year 8 regarding working with design movements and introduces the concept of designing within a set of constraints. It also prepares the students for GCSE Design and Technology. |