**TERM: Summer 2017**

**SUBJECT: Technology, Engineering and Design**

**YEAR GROUP: 7**

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| **TERM TOPIC: Graphics** |
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| Skill KPIs | To be able to clearly communicate ideas through isometric drawing, rendering, freehand sketching, orthographic drawing perspective drawing and exploded diagrams. |
| To create technical drawings with precise measurements and interpret measurements between 2D and 3D drawings. |
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| Theory KPIs | To be able to evaluate and identify strengths and weaknesses of their own work. |
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| **TERM TOPIC: Night Light** |
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| Skill KPIs | To be able to safely and neatly solder components to create a working circuit. |
| To solder safely by following all health and safety precautions, be able to identify risks and hazards and knowing what PPE to use. |
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| Theory KPIs | To successfully analyse more than 1 existing product using the ACCESSFM framework. |
| To write a design brief and a 4 specification that clearly communicates the aim of the project and the criteria which the project must follow. |
| To be able to explain the 4 Rs model of sustainability. |
| To be able to identify a battery, switch, resistor and LED from circuit symbols and know their functions. |
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| **TERM TOPIC: Pendant** |
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| Skill KPIs | To be able to, with teacher support, successfully cast a pewter shape into a personalised mould.  |
| To understand and use the correct PPE when casting. To be able to identify risks, hazards and precautions when sanding. |
| To be able to effectively implement quality control checks to both practical and design tasks in order to improve outcomes. |
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| Theory KPIs | To be able to name and describe at least 3 types of metals. |
| To be able to describe and explain the metal casting process. |
| To be able to evaluate and identify strengths and weaknesses of their own work. |
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| **TERM TOPIC: Solid Works** |
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| Skill KPIs | To create a basic 3D Solidworks model and export it into an accurate 2D technical Orthographic drawing. |
| To independently navigate the Solidworks tools and independently problem solve technical difficulties. To be able to support other students. |
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| Theory KPIs | To be able to identify a range of CAD and CAM methods and describe some advantages and disadvantages. |
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| **TERM TOPIC: Trinket Box** |
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| Skill KPIs | To be able to clearly communicate ideas through isometric and orthographic technical drawing. |
| To independently and successfully use a bench hook, Tenon saw, band facer, sand paper and tri square.  |
| To accurately measure, mark and cut x10 170mm and x10 150mm pieces of pine and construct comb joints effectively. |
|  |  |
| Theory KPIs | To be able to name and describe the working properties and characteristics of at least 3 types of wood. |
| To be able to describe and explain different joints, band facing, joining and sawing techniques. |
| To be able to identify risks, hazards and precautions associated with woodwork. |