# KS3 Design Technology

| Year Group | Termly Projects | Half-Termly Projects | Half-Termly Projects |
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| **Year 7** | **Product Design: Photo frame Project**<br><br>**By the end of the project you will be able to:**<br><br>• Create a specification and carry out a product analysis<br>• Explain what CAD / CAM is and use software effectively to model design<br>• Name the different materials and tools used to make your photo frame<br>• Create a mood board relevant to your user<br>• Produce a range of initial sketches and to communicate your design<br>• Use a range of finishing techniques.<br><br>**You will be assessed on:**<br><br>• 2D Design sticker design<br>• Specification<br>• Product Analysis<br>• Initial ideas<br>• Mood board<br>• Your practical outcome<br>• Your theory knowledge | **Architecture Design Project**<br><br>**By the end of the project you will be able to:**<br><br>• Evaluate existing designs– Product analysis<br>• Produce a range of initial sketches and use isometric drawing to communicate your design<br>• Use CAD to create accurate architectural drawings<br><br>**You will be assessed on:**<br><br>• 3D Modelling<br>• Initial ideas/ orthographic projection<br>• Design analysis<br>• Specification points | **Textiles: Pencil Case Project**<br><br>**By the end of the project you will be able to:**<br><br>• Name the basic textile equipment and processes<br>• Explain the differences between natural and synthetic polymers<br><br>**You will be assessed on:**<br><br>• Your practical outcome |
| **Year 8** | **Product Design: Clock Project**<br><br>**By the end of the project you will be able to:**<br><br>• Understand how biomimicry can inspire design, research patterns found in nature to produce initial ideas.<br>• Understand the advantage and disadvantages to using CAD software<br>• Name the different materials and tools used to make your clock<br>• Create a metal fish key ring using a range of techniques, learning about metal types.<br>• Use a range of finishing techniques<br><br>**You will be assessed on:**<br><br>• Patterns in nature<br>• Initial ideas<br>• 2D Design & Sketch up<br>• Evaluation and modifications<br>• Your practical outcome<br>• Your theory knowledge | **Designing Our Tomorrow Project**<br><br>**By the end of the project you will be able to:**<br><br>• Explain what a context is<br>• Explain why user wants/needs are so important when designing<br>• Explain why feedback is so important when prototyping<br>• Explain what problem solving is<br><br>**You will be assessed on:**<br><br>• Your Prototype / Improvements and Evaluation | **Textiles: Misfit Project**<br><br>**By the end of the project you will be able to:**<br><br>• Explain the important of sustainability<br>• Explain what a life cycle analysis is<br>• Name different fabrics and components<br><br>**You will be assessed on:**<br><br>• Your practical outcome |

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| **Year 9** | **Product design: Money Box Project\***<br><br>**By the end of the project you will be able to:**<br><br>• Explain the properties of Acrylic and how the strip heater can be used with polymers<br>• Explain how the laser cutter works well enough to produce a product (CAM)<br>• Explain why we model and test<br><br>**You will be assessed on:**<br><br>• Your practical outcome<br>• Your understanding of Tools and processes<br><br>**Product Design: Device Holder\***<br><br>**By the end of the project you will be able to:**<br><br>• Explain the different types of mechanisms such as linkages and levers<br>• Explain the properties of timbers<br>• Name the different materials and tools used to make your device holder<br>• Create a specification<br>• Create a workshop skills keyring<br>• Create a device holder using a range of techniques and finishes, learning about classifications of timbers and wood joints.<br>• Create a Sketch up model of the device holder<br>• Evaluate the device holder outcome and consider ways to modify the design.<br><br>**You will be assessed on:**<br><br>• Specification<br>• Evaluation and modifications<br>• Your practical outcome<br>• Your understanding of tools and processes | **Electronic Systems Project**<br><br>**By the end of the project you will be able to:**<br><br>• Explain what the four different types of components are and their jobs (Inputs Outputs)<br>• Explain the differences between microcontrollers and microprocessors<br>• Design a range of circuits<br><br>**You will be assessed on:**<br><br>• Knowledge of systems / Components and circuits (based on core electronics questions) | **Textiles: Food Sculpture Project**<br><br>**By the end of the project you will be able to:**<br><br>• Explain the properties of a range of smart materials<br>• Explain the properties of a range of modern and technical materials<br>• Name different fabrics and components<br><br>**You will be assessed on:**<br><br>• Your practical outcome |