Manufacturing Processes and Techniques : PCB Manufacture & Construction				
Calendar	**Big Question/Theme**	**Small Questions**	**Assessment Opportunities & Criteria. Teacher Feedback point (TFP)**	**Homework**
September to October Half Term	• How do sensors respond to a variety of inputs? • How are devices used to produce a range of outputs? • What are the working properties of electronic components? • What mathematical equations are used for electronic systems and components? • What manufacturing and disposal methods are used within electronic products?	• What defines a digital and an analogue sensor? • What different types of switch sensors exist and how do we use them? • What is a light sensor and how is a light dependent resistor used? • How and why is an infra-red sensor used? • How are speakers and buzzers used within electronic products? • What is the relationship between motors and drivers, and how are they implemented? • How do we calculate the power dissipate across a resistor? • How do we use Photo-etching to create a printed circuit board? • How is PCB isolation routing used to create a printed circuit board? • What is pick-and-place PCB manufacture? • What is meant by the WEEE directive? • How do we use Ohms law formula to calculate the relationship between voltage, current and resistance?		

Manufacturing Processes and Techniques : Prototyping				
Calendar	**Big Question/Theme**	**Small Questions**	**Assessment Opportunities & Criteria. Teacher Feedback point (TFP)**	**Homework**
October Half Term to Christmas	1. How can materials and processes be used to make iterative models? 2. How can materials be manipulated and joined in different ways in a workshop environment when making final prototypes 3. How do designers and manufacturers ensure accuracy when making prototypes and products?	1. What materials are commonly used by professionals when making models? 2. How can modelling materials be cut to size? 3. How can modelling materials be manipulated? 4. What adhesives can be used to join similar and dissimilar modelling materials? 5. What is the difference between a model and a prototype? 6. What is meant by rapid prototyping? 7. How do you use image creation and manipulation software to communicate your ideas? 8. What methods of digital manufacturing do professionals use when making modelling and prototyping? 9. What is CAD, CAM and CAE? 10. Why is the study of anthropometrics and ergonomics important when modelling and prototyping?		