Year 10 - BTECH TECH award in Engineering level 2

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| **Y10** | **Half term 1** | **Half term 2** | **Half term 3** | **Half term 4** | **Half term 5** | **Half term 6** |
| **Topic**  | Component 1. Exploring Engineering Sectors  Understanding engineering sectors. | Component 1.Engineering products and organisations, and how they interrelate. | Component 1. Design ApplicationsDesigning using CAD/CAM | Component 1.Exploring Engineers skills through the design process | Component 2. Investigating an Engineering ProductMaterials and properties. | Component 2. Investigating an Engineering ProductMaterials, Components, and processes.  |
| **Key words** | Civil,Mechanical, Electrical and Chemical engineering. | Careers, Engineering organisations.Functions in engineering. | Computer Aided Design, Research, Specification, Design Process. | CAD, CAM, Orthographic drawing, Exploded drawing, Assembly drawing, Presentation drawing. Evaluation. | Ferrous metal, Non-Ferrous metal, Alloys, Thermo-polymers, thermosetting polymers. Strength, Hardness and Toughness. | Proprietary component, product specific component. Shaping, cutting, joining and forming. |
| **Assessment** | Classwork, low stake testing. | Component 1 Learning Aim A. Internal assessment | Classwork, low stake testing. | Component 1 Learning Aim B. Internal assessment | Classwork, low stake testing. | Component 2 Learning Aim A. Internal assessment |

Year 11 - BTECH TECH award in Engineering level 2

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| **Y11** | **Half term 1** | **Half term 2** | **Half term 3** | **Half term 4** | **Half term 5** | **Half term 6** |
| **Topic**  | Component 2. B: Investigate a given engineered product using disassembly techniques | Component 2. C: Plan the manufacture and safely reproduce/inspect/test a given engineered component | Component 3. . Responding to an Engineering Brief.Carry out a process to meet the needs of an engineering brief. | Component 3. Provide a design solution for an engineered product against the needs of an engineering brief. | Component 3. Provide solutions to meet the needs of an engineering brief. |  |
| **Key words** | Disassembly Product Design Specification.Product life and reliability. Performance, service, economic and making consideration. Standards and legislation. | Plan for manufacture, Health and safety, risk assessment. Manufacturing.  | Engineering processes, Prototypes, models, functional, ergonomic and destructive testing. Data – interpretation and evaluation. | Dimensions, Tolerances, surface finishes, physical form. | Working drawings, one off, batch and mass production. Analysing data. |  |
| **Assessment** | Component 2 Learning Aim B. Internal assessment | Component 2 Learning Aim C. Internal assessment | Classwork, low stake testing. Mock exam paper | Component 3 – Past papers. Internal assessment. | Component 3 – External Exam |  |