**­­Ormiston Park Academy Curriculum Map (Yrs 7-11) Updated September 2019 Department: DESIGN AND TECHNOLOGY Curriculum Leader: C BERRY**

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|  | HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
| **Year 11**  **2020** | Key Content:  Revision: Exam 28th November 2019 AM   * 1.2 – The Health and Safety Legislation Governing Engineering * 1.1 – Engineering Discipline through Projects and Products * 2.1 – Application of SI Units of Measurements * 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry * 3.1 – Reading Engineering Drawings * 4.1 – Properties and Characteristics of Materials   Homework:   * Engineering Workbook * Exam Practice | Key Content:  Revision: Exam 28th November 2019 AM   * 5.1 – Tools, Equipment and Machines * 5.2 – Safe and Correct Use   Synopsis preparation and introduction   * 1.1 – Engineering Drawings – Hand drawn * 2.1 – Engineering Drawings – CAD   Homework:   * Engineering Workbook * Exam Practice | Key Content:  Externally Set Synopsis – Deadline for completion 13th March 2020   * 1.1 – Engineering Drawings – Hand drawn * 2.1 – Engineering Drawings – CAD * 3.1 – Production Planning * 4.1 – Skills and Techniques * 4.2 – Safe and Correct Use of Tools, Equipment and Machines   Resit Revision (If needed): Exam Date 19th March 2020   * 1.2 – The Health and Safety Legislation Governing Engineering * 1.1 – Engineering Discipline through Projects and Products * 2.1 – Application of SI Units of Measurements * 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry * 3.1 – Reading Engineering Drawings * 4.1 – Properties and Characteristics of Materials * 5.1 – Tools, Equipment and Machines * 5.2 – Safe and Correct Use   Homework:   * Engineering Workbook * Exam Practice * Synopsis | Key Content:  Externally Set Synopsis – Deadline for completion 13th March 2020   * 4.1 – Skills and Techniques * 4.2 – Safe and Correct Use of Tools, Equipment and Machines   Resit Revision (If needed): Exam Date 19th March 2020   * 1.2 – The Health and Safety Legislation Governing Engineering * 1.1 – Engineering Discipline through Projects and Products * 2.1 – Application of SI Units of Measurements * 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry * 3.1 – Reading Engineering Drawings * 4.1 – Properties and Characteristics of Materials * 5.1 – Tools, Equipment and Machines   5.2 – Safe and Correct Use  Homework:   * Engineering Workbook * Exam Practice * Synopsis | Key Content:  Externally Set Synopsis – Deadline for completion TBC   * 1.1 – Engineering Drawings – Hand drawn * 2.1 – Engineering Drawings – CAD * 3.1 – Production Planning * 4.1 – Skills and Techniques * 4.2 – Safe and Correct Use of Tools, Equipment and Machines   Homework:   * Synopsis | Key Content: |
| **Assessment Opportunities** | Mock Paper 1 | Mock Paper 2 | Mock Paper 1  Synopsis assessment criteria | Mock Paper 2  Synopsis assessment criteria | Synopsis assessment criteria |  |
|  | Key Skills:   * Key Terminology * Research and Analysis * Exam skills and terms | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Analysis and working to a criteria * Exam skills and terms | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Analysis and working to a criteria * Exam skills and terms | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Analysis and working to a criteria * Exam skills and terms | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Analysis and working to a criteria |  |
| Y**ear 10**  **2021**  Switch to NCFE Technical Award Engineering  November 2018 | Key Content:   * The Health and Safety Legislation Governing Engineering * Application of SI Units of Measurements * Engineering Discipline through Projects and Products   + Aerospace Engineering   + Communications Engineering   + Chemical Engineering   + Civil engineering   + Automotive Engineering   + Biomedical Engineering   + Software Engineering   Homework:   * Engineering Workbook * Exam Practice | Key Content:   * Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry * Reading Engineering Drawings * Properties and Characteristics of Materials   + Properties in all sectors   + Characteristics – Aesthetics and Environmental impact   + Materials – Metals, Polymers, Woods (recap) Ceramics Composites * Material investigation   Revision and exam preparation:   * The Health and Safety Legislation Governing Engineering * Engineering Discipline through Projects and Products * Application of SI Units of Measurements   Homework:   * Engineering Workbook * Exam Practice | Key Content:  Properties and Characteristics of Materials:   * Properties in all sectors * Characteristics – Aesthetics and Environmental impact * Materials – Metals, Polymers, Woods (recap) Ceramics Composites   Safe and Correct Uses:   * Quality Control * Quality Assurance   Tools, Equipment and Machines:   * Introduction to the workshop practices for engineering   Revision and exam preparation::   * Application of SI Units of Measurement * Equations – Energy, Force, and Motion & Electrical and Geometric * Health and Safety Act   Homework:   * Engineering Workbook * Exam Practice | Key Content:  Synopsis preparation   * 1.1 – Engineering Drawings – Hand drawn   2.1 – Engineering Drawings – CAD  Revision and exam preparation::   * 1.2 – The Health and Safety Legislation Governing Engineering * 1.1 – Engineering Discipline through Projects and Products * 2.1 – Application of SI Units of Measurements   Homework:   * Engineering Workbook * Exam Practice | Key Content:   * Mock Synopsis Task – Crane Task   + 1.1 – Engineering Drawings – Hand drawn   + 2.1 – Engineering Drawings – CAD   + 3.1 – Production Planning   + 4.1 – Skills and Techniques   + 4.2 – Safe and Correct Use of Tools, Equipment and Machines   Revision and exam preparation:   * 4.1 – Properties and Characteristics of Materials * 5.1 – Tools, Equipment and Machines * 5.2 – Safe and Correct Use   Homework:   * Engineering Workbook * Exam Practice | Key Content:   * Mock Synopsis Task – Crane Task   + 1.1 – Engineering Drawings – Hand drawn   + 2.1 – Engineering Drawings – CAD   + 3.1 – Production Planning   + 4.1 – Skills and Techniques   + 4.2 – Safe and Correct Use of Tools, Equipment and Machines   Homework:   * Engineering Workbook * Exam Practice |
| **Assessment Opportunities** | End of Half Term Assessment | Mock Paper 1 | End of Half Term Assessment | Mock Paper 2  Synopsis assessment criteria | End of Half Term Assessment  Synopsis assessment criteria | Mock Paper 3  Synopsis assessment criteria |
|  | Key Skills:   * CAD/CAM – further skills * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and * working to a criteria | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and working to a criteria * Understanding mechanisms * Understanding types of mechanisms | Key Skills:   * Hand tools and manufacturing processes – Soldering * Use of CAD/CAM * Precision and accuracy * Researching * Testing and Evaluating * Exams skills | Key Skills:   * Exam skills and terms * Product Analysis * Design and development * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and working to a criteria * Use of CAD/CAM | Key Skills:   * Exam skills and terms * Understanding of CAD/CAM * Product Analysis * Design and development * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and working to a criteria | Key Skills:   * Exam skills and terms * Understanding of CAD/CAM * Product Analysis * Design and development * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and working to a criteria |
| Year 9  2022 | Key Content:   * Brand Identity – Coca Cola (modelling)   Homework:   * Health and Safety Quiz * Keywords Spellings | Key Content:   * Brand Identity – Coca Cola (modelling)   Homework:   * Investigate and analyse the work of past and present design – Exam Style Questioning * Keywords Spellings/Definitions | Key Content:  Material Properties task - Polymers   * CAD/CAM – Headphone wraps and product prototyping   Introduction to Engineering:   * Electronics and Electrical engineering * Aerospace Engineering * Communications Engineering * Chemical Engineering * Sustainability * Renewable Energy   Homework:   * Engineering Case studies |
| **Assessment Opportunities** | End of Project Assessment | End of Term Assessment | End of Rotation Test |
|  | Key Skills:   * CAD/CAM – further skills * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and * working to a criteria | Key Skills:   * Hand tools and manufacturing processes * Precision and accuracy * Researching * Analysis and working to a criteria * Understanding mechanisms * Understanding types of mechanisms | Key Skills:   * Hand tools and manufacturing processes – Soldering * Use of CAD/CAM * Precision and accuracy * Researching * Testing and Evaluating * Exams skills |
| Year 8  2023 | Key Content:   * Mechanisms, Cams and Levers – Pin Ball Toy   Homework:   * Health and Safety Quiz * Keywords Spellings | Key Content:   * Mechanisms, Cams and Levers – Pin Ball Toy   Homework:   * Investigate and analyse the work of past and present design – Exam Style Questioning * Keywords Spellings/Definitions | Content:   * Mechanisms, Cams and Levers – Pin Ball Toy   Homework:   * Investigate and analyse the work of past and present design – Exam Style Questioning * Keywords Spellings/Definitions |
| **Assessment Opportunities** | End of Health and Safety Assessment | End of Project Assessment | End of Rotation Test |
|  | Key Skills:   * Understanding of Mechanisms and Cams * Research and analysis * Design development * Rendering and annotation * Hand Tools – Coping saw, tenon saw, try square, drills * Marking and measuring | Key Skills:   * Understanding of Mechanisms and Cams * Research and analysis * Design development * Rendering and annotation * Hand Tools – Coping saw, tenon saw, try square, drills * Marking and measuring | Key Skills:   * Understanding of CAD * Understanding of CAM * Design development * Rendering and annotation * Materials processes – Vacuum Former * Modelling/mould making |
| Year 7  2024 | Key Content:   * Introduction to the workshop * Baseline Assessment – Bird Memo Stands   Homework:   * Health and Safety Quiz * Keywords Spellings | Key Content:   * Baseline Assessment – Bird Memo Stands * Textiles - Monsters   Homework:   * Investigate and analyse the work of past and present design – Exam Style Questioning * Keywords Spellings/Definitions | Key Content:   * Textiles - Monsters   Homework:   * Investigate and analyse the work of past and present design – Exam Style Questioning * Keywords Spellings/Definitions |
| **Assessment Opportunities** | End of Project Assessment | End of Project Assessment | End of Rotation Test |
|  | Key Skills:   * Designing with simple annotations and introduction to rendering * Cutting and shaping – coping saw * Product finishes – smoothing and understanding of sand paper grading * Drilling – hand drill | Key Skills:   * Extended annotations with justifications * Rendering skills * Cutting and shaping – coping saw, tenon saw, and fret saw * Product finishes – smoothing and quality of finish * Understanding of Lamination | Key Skills:   * Development of finishing techniques * Colour theory * Annotation and analysis skills * Cutting and drilling – Pillar drill, Tenon saw, Coping saw, and fret saw |