Curriculum Content Map DT - Yr10

| | TERM 1 | | TERM 2 | | TERM 3 | |
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| Unit title & description | Introduction / Polymers | Metals / Mechanisms | Natural Timbers | Natural Timbers / CADCAM / Smart Mat | Systems / Electronics | Paper and Boards / Textiles / Practice NEA |
| Sequencing - Why is this taught and now? | Introduction to the course and how it will be taught. The basics on what the Design Industry, history to contemporary to future. Reintroduction to the workshop and introduction to the classroom as studio. Introduction to Technical Principles and Core Content; Polymers Introduction to Design and Making Principles | Introduction to Technical Principles and Core Content; Metals Introduction to Technical Principles and Core Content; Mechanisms Development of Design and Making Principles | Introduction to Technical Principles and Core Content; Natural Timbers Development of Design and Making Principles | Development of Technical Principles and Core Content; Natural Timbers Development of Technical Principles and Core Content; Design Tecnology and our World Introduction to Technical Principles and Core Content; Smart and Modern Materials Development of Design and Making Principles | Introduction to Technical Principles and Core Content; electrical systems and programable components Development of Technical Principles and Core Content; Mechanisms (+ Energy) | Introduction to Technical Principles and Core Content; Paper and Boards Introduction to Technical Principles and Core Content; Textiles Development of Design and Making Principles; NEA POSSIBILITY / NEA Launch |
| Knowledge | Theory Knowledge - Polymers Theromoforming and Thermosetting. Stock forms, types of plastic, manipulation, uses, properties, cultural importance, impacts, ads/ disads Scales of Production one off, batch, mass, JIT - Quality Control / Assurance – Standards, tolerances, Flowcharts - Sustainability - 6Rs | Theory Knowledge - Metals Ferrous, non-ferrous, alloys, periodic table, uses, properties, manipulation, production, sources, cultural importance, impacts, ads/ disads Life Cycle Analysis Linear / Cyclical - Design Iteration - Mechanisms Types of motion, Levers, Linkages | Theory Knowledge - Natural Timber Softwood, Harwood, Manufactured Boards, uses, properties, manipulation, production, sources, cultural importance, impacts, ads/disads, treatments - Design Process - Wastage, Addition and Subtraction - Fixings and Adhesives | Theory Knowledge - Natural Timber Softwood, Harwood, Manufactured Boards, uses, properties, manipulation, production, sources, cultural importance, impacts, ads/disads, treatments - Computer Aided Design 3D space, impacts on design, input/output, CAM, ads/disads - Smart and Modern | Theory Knowledge - Electronics Systems, components, uses, properties, production, cultural importance, impacts, ads/disads, - Mechanisms Cams, pulleys, gears, forces, calculations | Theory Knowledge - Paper and Boards Stock forms, types of paper and boards, manipulation, uses, properties, cultural importance, impacts, ads/ disads Textiles Stock forms, types of textiles, manipulation, uses, properties, cultural importance, impacts, ads/ disads. |

| Skills | - Forming, Reforming, Deforming Practical skills - Measuring and Marking Tools, use and selection - Polymer Manipulation Cutting, Drilling, Sanding etc (hand and power) - Finishing – Polish - Creativity - Drawing – Technical - Heat de/reformation of polymers Projects - Line Bending Phone holder - Scales of P Origami - HDPE Reform Keyring | Practical skills - Measuring and Marking - Metals Manipulation Cutting, Drilling, Sanding etc (hand and power) - Finishing – Polish - Creativity - Drawing – Technical - Smelting metals Projects - Pewter Jewellery - Mechanism demonstrations. | Practical skills - Measuring and Marking - Timber Manipulation Cutting, Drilling, Sanding etc (hand and power) - Surface Treatments - Creativity - Drawing – Technical - Existing Product Analysis - Fixings and Adhesives - Constructive Methods - Hot wire Projects - Off-cut Robot - Wood Joints - Lamination | Materials uses, importance, examples (Polymorph / SMA / Carbon fiber / Kevlar/ etc.) Practical skills - CAD 3D visualisation Projects - CAD skills - CAD Chair design project | Practical skills - Measuring and Marking - Material Manipulation - Soldering and PCB construction - Creativity - Drawing – Technical and CAD Projects - Pocket Lighting - Mechanisms - demonstrations | Practical skills - Measuring and Marking - Material Manipulation - Soldering and PCB construction - Creativity Projects - Paper making / book - Mini Textiles project hand sewing and machine |
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| Retrieval practice Prior knowledge and skills that are revisited | - Retrieval of KS3 Y8 Polymer Knowledge and extension Workshop and H&S knowledge - Cross Curricula - Sustainability (Geography) Polymers (Sci – Chem) | - Cross Curricula – Metals (Sci - Chem) Mechanisms (Sci – physics and Maths) - Workshop and H&S knowledge | - Retrieval of KS3 Y7/Y9 Timber Knowledge and extension Workshop and H&S knowledge - Cross Curricula - Sustainability (Geography) | - Cross Curricula – CAD (Comp Sci) Smart/Mod (Sci – Chem) | - Cross Curricula – Electronics (Comp Sci / Sci - Physics) Mechanics (Sci – Physics / Maths) | - Cross Curricula – Paper and Boards - deforestation (Geography) |
| Literacy | - Exam questions | - Exam questions | - Exam questions | - Exam questions | - Exam questions | - Exam questions |
| | - Spelling, keywords, Teir | - Spelling, keywords, Teir | - Spelling, keywords, Teir | - Spelling, keywords, Teir | - Spelling, keywords, Teir | - Spelling, keywords, Teir |
| | 1-3 specialist. | 1-3 specialist. | 1-3 specialist. | 1-3 specialist. | 1-3 specialist. | 1-3 specialist. |
| X ÷ Numeracy | - Practical work | - Practical work | - Practical work | - Practical work | - Practical work | - Practical work |
| | numeracy eg, | numeracy eg, | numeracy eg, | numeracy eg, | numeracy eg, | numeracy eg, |
| | measurements, area, etc | measurements, area, etc | measurements, area, etc | measurements, area, etc | measurements, area, etc | measurements, area, etc |

| æ | - Visit to Recycling Project in Soho | | | - Visit to furniture maker (tbc) | - Talk programme (tbc) | |
|---------------------|---|-----------------------|-----------------------|----------------------------------|------------------------|-----------------------|
| Enrichment | | | | (120) | | |
| learning | | | | | | |
| British | | | | | | |
| values | | | | | | |
| Character | | | | | | |
| | - Market Research | - Market Research | - Market Research | - Market Research | - Market Research | - Market Research |
| | - Project Management | - Project Management | - Project Management | - Project Management | - Project Management | - Project Management |
| | - Product Design | - Product Design | - Product Design | - Product Design | - Product Design | - Product Design |
| | - Graphic Design | - Graphic Design | - Graphic Design | - Graphic Design | - Graphic Design | - Graphic Design |
| • | - UX/UI Design | - UX/UI Design | - UX/UI Design | - UX/UI Design | - UX/UI Design | - UX/UI Design |
| À | - Architecture | - Architecture | - Architecture | - Architecture | - Architecture | - Architecture |
| | - Industrial design | - Industrial design | - Industrial design | - Industrial design | - Industrial design | - Industrial design |
| ~ / <u>-</u> | - Engineering | - Engineering | - Engineering | - Engineering | - Engineering | - Engineering |
| Careers | - Textiles / Fashion | - Textiles / Fashion | - Textiles / Fashion | - Textiles / Fashion | - Textiles / Fashion | - Textiles / Fashion |
| | - Manufacturing | - Manufacturing | - Manufacturing | - Manufacturing | - Manufacturing | - Manufacturing |
| | - Business | - Business | - Business | - Business | - Business | - Business |
| | - etc. | - etc. | - etc. | - etc. | - etc. | - etc. |
| 4. | Formative – practical | Formative – practical | Formative – practical | Formative – practical | Formative – practical | Formative – practical |
| \times=16 | skills | skills | skills | skills | skills | skills |
| Assessment | Summative – Exam | Summative – Exam | Summative – Exam | Summative – Exam | Summative – Exam | Summative – Exam |
| opportunities | practice | practice and AP | practice and AP | practice | practice and AP | practice |

| Personalised challenge for all: SEND, HPA | | | |
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