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| **YEAR 8 D&T LONG TERM PLAN (2020-21)** | | | | | | | |
|  | | **Term 1** | | **Term 2** | **Term 3** | **Term 4** | **Term 5** |
| **Units** | | **INDUCTION** | | **TREE HOUSE** | **REDESIGN THAT** | **SYSTEMS CONTROL** | **BIRD FEEDER** |
| ­­­  **AREA**  **OF**  **LEARNING** | WK 1 | **Base Line Test**  **Areas :**  -Food & Nutrition  -Resistant Materials  -Graphics  -Product Design  -Maths in D&T  -H&S  -Designing | | **Designs Ideas**  Sketch and annotate final design with measurements for prototype manufacture.  Label each part to identify its function  **Using ACCESS FM** | **Focused Task: Packaging Design**  Learners will learn about the importance of colour, and how it can be linked to different target markets  Create a range of logos using colour to indicate target markets  Design and produce packaging (net design) for a new chocolate sweet. | Introduction to project  Classify and identify timber.  Advantages of manufactured boards over natural timber  Mark out components of the bird feeder | Introduction to project  Classify and identify timber.  Advantages of manufactured boards over natural timber  Mark out components of the bird feeder |
| WK 2 | Walk through on Base Line Test  Learner Feedback | | **Design Development**  Explore how the Tree House could be assembled  What materials / components will you need  Proposal pitch for prototype | **Redesign That**  **Research**  Learners discuss what issues people may face in the future that they would need help with.  Research 3 areas of robots supporting or assisting situations | Remove waste material on the backboard and rails with a the tenon saw  Finish edges using linisher and abrasive paper  Assemble the roof | Remove waste material on the backboard and rails with a the tenon saw  Finish edges using linisher and abrasive paper  Assemble the roof |
| WK 3 | **Skills of the Designer**  -Isometric  -One-Point Perspective  -Two-Point Perspective  - H&S Induction | | **Modelling**  Marking out materials  Plan the net design  Cutting and shaping materials  Finishing edges  Assemble components  Complete prototype  **Prototype development**  **Cut and assemble your Tree House**  H&S  Demonstrate how to use equipment correctly and safely   * Cutting knife * Cutting board * Thermocutters   Assembly of edges using adhesives eg. Tape, PVA, Pritstick. | **Design - Learners will design a robot that will help a specific group of people.**  Design Development - Designers create a series of rough sketches at the beginning of the design process to get their thoughts on paper. | Finish the edges of the roof  Discuss function of surface treatments  Apply wood stain to the roof.  Drill holes on the rails and back board using the pillar drill  Vacuum form the water trough | Finish the edges of the roof  Discuss function of surface treatments  Apply wood stain to the roof.  Drill holes on the rails and back board using the pillar drill  Vacuum form the water trough |
| WK 4 | **Communication of design ideas**  Design Strategies  The work of others  Using and working with materials  Prototype development Introduction to the project  Identify features of world class architects like Norman Foster style  Sketch orthographic drawing  Floor plan, front view and side view (Drawings must show measurements of the components)  Two-point perspective  Identify materials, form and features of his design  Generate ideas – look at design influences - Norman Oster  Develop ideas for your tree house model using the work of others | | Learners will debate the advantages and disadvantages of robots.  -List as many different products where solar power is used  Product Focus: Renewable energy in manufacturing Case study.  Redesign a unused British Phonebox so that it can be reinvented.  Look at examples of reuse projects  What could the future look like? | Mark out and trim water trough  Use the strip heater to bend one end of the trough  Finish the edges of the water trough  Assemble components | Mark out and trim water trough  Use the strip heater to bend one end of the trough  Finish the edges of the water trough  Assemble components |
| WK 5 |  | | Learners will produce a model of their concept Phonebox | Function of Surface treatments/finishes  Apply finishes to bird feeder | Function of Surface treatments/finishes  Apply finishes to bird feeder  Learners will look at the advantages of wood protection and wood stain |
| WK 6 |  | | Test and evaluate your model  Peer/ Self Assessment  DIRT | Evaluation  DIRT | Evaluate Bird feeder & make suggestions for modifications | Evaluate Bird feeder & make suggestions for modifications |
| **ASSESSMENT OBJECTIVES**  *AO1: Identify, investigate & outline design possibilities*  *AO2: Design & make prototypes that are fit for purpose*  *AO3: Analyse & evaluate* | | **AO2**: DEVELOPING DESIGN IDEAS   * Modelling Innovation and creativity   **AO2**: Generating Design Ideas | | **AO1:** Design Specification  **AO2**: Developing Design ideas   * Material Selection   **AO3**: Analysing & Evaluating  Modifications | **AO3**: ANALYSING & EVALUATING   * Iterative design * Ongoing analysis | **AO1**: INVESTTIGATING DESIGN POSSIBILITIES  • The work of others  **AO2**: REALISING DESIGN IDEAS  • Level of skill  AO3: Analysing & Evaluating  • Modifications | **AO1:** Design Specification  **AO2**: Developing Design ideas   * Material Selection |
| **IMPACT**  (Evaluating what knowledge + understanding pupils’ have gained against expectations through assessment/feedback) | **Formative Assessment** |  | The work of others  Modelling | Ongoing verbal feedback throughout the project  Evaluating - modifications | Material selection | Ongoing analysis | Evaluation |
| **Summative Assessment** |  | Innovation and creativity | Level of skill | Modifications  Design Specification | Iterative design | Level of skill |
| **Remote Learning tasks** | |  | Two-point perspective Norman foster buildings  Third angle Orthographic drawing  Investigate the work of Norman Foster  Build model of Tree House using cereal box and cling film. |  | Generating ideas for plastic challenge  Explore upcycled plastic items and experiment with throwaway plastics at home | Experimenting complex pop up mechanisms | Classes and types of timber, properties and applications  Advantages of manufactured boards and application |
| **Notes** | | ***Bandsaw installation WB 21/09/20***  ***Power to pedestal drill and Circular saw engineer WB 21/09/20***  ***\*refer to COVID 19 Risk Assessment*** | ***All modules are approximately six weeks*** | | | | |

\*Pilot to be developed further

**Mobie Challenge Rationale**

This design challenge is asking you to think about the 21st century home. How do people actually live in their homes and what things like technology, affordability, size, space (private and shared), family growth, sustainability, comfort, individuality, work, entertainment, aesthetics must we consider when designing new family homes?

The concept of this ‘home for life’ begins with a ‘starter’ home for a single person possibly with a partner. As the family needs and circumstances increase, the home and space will be extended with the addition and attachment of new modules. Thus a home for the multi-generational family can be created. This modular system will allow for disassembly and affordable re-location with minimum disruption and re-modelling if and when required and eventual down-sizing.

MOBIE and the Construction Innovation Hub (CIH) are your clients and manufacturers for this house.