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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 projectClassify and identify timber.Advantages of manufactured boards over natural timberMark out components of the bird feeder | Introduction to projectClassify and identify timber.Advantages of manufactured boards over natural timberMark out components of the bird feeder |
| WK 2 | Walk through on Base Line TestLearner Feedback | **Design Development**Explore how the Tree House could be assembledWhat materials / components will you needProposal 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 sawFinish edges using linisher and abrasive paperAssemble the roof | Remove waste material on the backboard and rails with a the tenon sawFinish edges using linisher and abrasive paperAssemble the roof |
| WK 3 | **Skills of the Designer** -Isometric-One-Point Perspective-Two-Point Perspective - H&S Induction  | **Modelling** Marking out materialsPlan the net design Cutting and shaping materialsFinishing edgesAssemble componentsComplete 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 roofDiscuss function of surface treatmentsApply wood stain to the roof.Drill holes on the rails and back board using the pillar drillVacuum form the water trough | Finish the edges of the roofDiscuss function of surface treatmentsApply wood stain to the roof.Drill holes on the rails and back board using the pillar drillVacuum form the water trough |
|  WK 4 | **Communication of design ideas**Design StrategiesThe work of othersUsing and working with materialsPrototype development Introduction to the projectIdentify features of world class architects like Norman Foster styleSketch orthographic drawingFloor plan, front view and side view (Drawings must show measurements of the components)Two-point perspective Identify materials, form and features of his designGenerate ideas – look at design influences - Norman OsterDevelop 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 usedProduct 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 troughUse the strip heater to bend one end of the troughFinish the edges of the water troughAssemble components | Mark out and trim water troughUse the strip heater to bend one end of the troughFinish the edges of the water troughAssemble components |
|  WK 5 |  | Learners will produce a model of their concept Phonebox | Function of Surface treatments/finishesApply finishes to bird feeder | Function of Surface treatments/finishesApply finishes to bird feederLearners will look at the advantages of wood protection and wood stain |
| WK 6 |  | Test and evaluate your modelPeer/ Self AssessmentDIRT | 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 & EvaluatingModifications | **AO3**: ANALYSING & EVALUATING* Iterative design
* Ongoing analysis
 | **AO1**: INVESTTIGATING DESIGN POSSIBILITIES• The work of others**AO2**: REALISING DESIGN IDEAS• Level of skillAO3: Analysing & Evaluating• Modifications | **AO1:** Design Specification**AO2**: Developing Design ideas* Material Selection
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| **IMPACT**(Evaluating what knowledge + understanding pupils’ have gained against expectations through assessment/feedback) | **Formative Assessment**  |  | The work of othersModelling | Ongoing verbal feedback throughout the project Evaluating - modifications | Material selection | Ongoing analysis | Evaluation  |
| **Summative Assessment**  |  | Innovation and creativity | Level of skill | ModificationsDesign Specification | Iterative design | Level of skill |
| **Remote Learning tasks** |  | Two-point perspective Norman foster buildingsThird angle Orthographic drawingInvestigate the work of Norman FosterBuild model of Tree House using cereal box and cling film. |  | Generating ideas for plastic challengeExplore upcycled plastic items and experiment with throwaway plastics at home | Experimenting complex pop up mechanisms | Classes and types of timber, properties and applicationsAdvantages 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.