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**PROVINCIAL RECOVERY PROGRAMME FOR TECHNOLOGY GRADE 7 -9**

**TECHNOLOGY CATCHUP TOPICS**

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| **GRADE** | **CONTENT** | **ASSESSMENT** | **PLANNED DATE OF COMPLETION** |
| **7** | Learners make a simple working model.  *(At a minimum, the “Jaws-of-Life” model may be a simple device representing how any one*  *Machine in the “Jaws-of-Life” system will work using plastic tubing, syringe(s) and cardboard.)* | PAT Portfolio | 13/03/2020 |
| • Definition and purpose of structures to contain, protect, support, span.  • Classification of structures: natural and man-made.  **Types of structures: shell, frame, solid – learners complete a worksheet.** | Informal worksheets | 03/04/2020 |
| • Investigate: a cell phone tower – a frame structure  • Case study: examine existing towers strengthened by triangulation, including pylons, windmills and mine headgear.  • Evaluate: worksheet on the advantages and disadvantages of telephone systems; | Informal worksheets | 09/04/2020 |
| **8** | Model of watch tower  • Communicate: teams present their plans and model.  • Communicate: a sketch in double VP perspective enhanced using two of colour, texture or shading. | PAT Portfolio | 13/03/2020 |
| **• The positive impact of technology:** many natural materials have been replaced in modern times by new or improved materials. Some new materials are environmentally friendly by being bio-degradable.  **• Case study 1:** investigate the impact of plastic shopping bags on the environment.  **• Report**: learners write a report evaluating the effectiveness of using thicker, bio-degradable plastic shopping bags which shoppers must buy. | Informal Worksheets | 03/04/2020 |
| • Case study 2: technology with a positive impact on society.  -- Investigate how waste paper and cardboard are recycled to produce new products for the packaging industry.  • Development: draw a development of an opened container. | Informal Worksheets | 09/04/2020 |
| **9** | **PAT Bridge tender and model**  **• Evaluate:** teams collaborate to produce an evaluation instrument. Each learner uses the instrument to evaluate their team’s solution and that of another team. This can be done during the other team’s presentation.  **• Team presentations:** teams present their tender bid to the “Tender Board”. Each team member must be responsible for an aspect of the presentation. Tenders consist of sketches, plans, budget, model and artistic impressions. | PAT Portfolio | 13/04/2020 |
| **• Revise**: syringe mechanics using two equal sized syringes linked by a tube. Force transfer between the syringes filled with:  -- Compressed air – pneumatic system.  -- Water – hydraulic system.  **• Action research**: learners experiment with two different sizes of syringes linked by a tube and filled with hydraulic fluid (water). Learners ***experience*** force transfer with either force multiplication or force division (depending on which syringe is the driver/master). Gases (like air) are compressible. Liquids (like water, oils) are incompressible.  **• Action research**:  Pascal’s principle – *pressure exerted on one part of a hydraulic system will be transferred equally, without any loss, in all directions to other parts of the system*.  Note that equal volumes of liquid are moved through the systems, and this results in different extensions (amount of movement) where syringes (cylinders) are of different sizes, so less distance/more force (MA > 1); and more distance/less force (MA < 1). | Informal Worksheets | 03/04/2020 |
| • The hydraulic press (including simple calculations).  • The hydraulic jack.  **• Investigation:** Design considerations ~ fit-for-purpose:  -- Evaluate the design of the hydraulic jack in terms of: Who is it for? What is it for? Will it do the job? What should it be made of? What should it cost? Is it cost-effective? Does it look good (aesthetics)? Is it safe/easy to use for the end user (ergonomics)?  • Draw a systems diagram which describes the way a hydraulic jack works. | Informal Worksheets | 09/04/2020 |