

**CODE/MOE/UOIT Makerspaces Project**

**Lesson Plan: Grade 6 Mathematics: Measurement: Building Structures**

|  |
| --- |
| **Lesson Objectives:**   1. **To explore varieties of real-life structures and design and build one to fit criteria.** 2. **To use formulas to show thinking and calculations of total surface area.** 3. **To become critical thinkers by analyzing information, making connections and explaining our reasoning.** |
| **Mathematics Curriculum Expectations: Measurement**   1. determine, through investigation and strategies, the surface area of rectangular and triangular prisms. 2. solve problems involving the estimation and calculation of the surface area of prisms. 3. develop formulas using area relationships |
| **Learning Goal:**  We are learning to find the total surface area of rectangular prisms and triangular prisms. |
| **Success Criteria:**  ***I can…***  -           Come up with a plan to solve the problem.  -          Use formulas and show all of my work.  -          Explain my thinking clearly.  -          Make connections in the real world.  -          Design and create a 3D plan of my proposed building. |
| **Lesson Overview:**   * You are making a separate building structure that will be available for use at the new school. * The building will need to be between 500 and 1000 meters square. (A rectangular prism and a triangular prism.) * Write a proposal as to what this building could be used for by the school community. * Research different structures around the world. Keep in mind that you are finding the surface area. |
| **Materials and Technology:**   * Research different designs * Variety of construction materials available such as cardboard, paper, graph paper for planning, wood strips, tape, glue |
| **Minds-on:**   * Look at and discuss the plans for our new school, including the outside space available. * Discover the formulas and strategies for calculating total surface area using three dimensional objects as well as nets of rectangular prisms and triangular prisms. * Show examples of student work that clearly shows the steps in calculating area |
| **Action:**   * Design a structure * Do calculations to see if it fits the criteria for size (The building will need to be between 500 and 1000 meters square). * Build the structure * Teachers may provide descriptive feedback throughout the process * Clearly show the steps you took to calculate the total surface area. * Assessment can be done using a checklist or rubric * Students may be asked to self- and/or peer-assess their work |
| **Consolidation:**   * Begin or end work periods with discussions around what is working, what problems or questions they have. * Gallery walks to look at the work of others. * Student presentations with time for questioning/ feedback. |