

# Lesson Plan

School of Education and Professional Learning

<b>Topic:</b>		
Course: Math. MBF3C	Grade Level: 11	
Unit: Geometry and Trigonometry	Teacher: Recy Thomas	Date: Jan. 20, 2018

## Rationale - Curriculum Expectations:

Overall Expectation(s) addressed:  1. Learners will represent, in a variety of ways, two-dimensional shapes and three-dimensional figures arising from real-world applications, and solve design problems;	Specific Expectation(s) addressed:  1.1 Learners will recognize and describe real-world applications of geometric shapes and figures, through investigation in a variety of contexts, and explain these applications.
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## Learning Goal(s):

<ul style="list-style-type: none"> <li>- We will learn how some indigenous structures and tools were made.</li> <li>- We will learn about the applications of some real-world designs.</li> </ul>	<b>Success Criteria:</b> <ul style="list-style-type: none"> <li>- I can explain the application of a real world design.</li> <li>- I can suggest possible enhancements to some designs.</li> </ul>
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**Key/Essential Questions for Lesson:**

1. What is the purpose of this design?
2. What real-world solutions are brought forward by these designs?
3. How can we preserve and/or enhance these designs?

## Assessment/Evaluation:

What is the purpose of the assessment? ("for", "of" or "as" learning)  
 How will the students demonstrate their learning?  
 How will the teacher document/track students' learning?

Students will engage in the activities in a meaningful way.  
 Student will work as a team.  
 Each member will contribute to the group.  
 They will reason brainstorm and problem solve.  
 Teacher will support students' learning by listening, observing, and guiding their thinking.

Lesson Sequence	Time	Activities / Planning
<b>Activating Student Learning</b> ("Minds-On", motivational strategy/ hook, activation of prior knowledge)		<b>Toppling tower activity</b> We will use 30 package boxes (rectangular prisms) to create a 3D structure. Each level will consist of 3 boxes of a variety of colours. Light blue box represents the air Dark blue box represents the water Yellow box represent the sun Green box represent the plant Red box represent the red water (blood)

		<p>Multi-colour box represent culture Brown box represent soil</p> <p>A series of environmental questions will be asked ranging from water pollution to global warming. We will individually as a group brainstorm and suggest possible solutions. Thinking about how we can care for the land.</p> <p>The aim is to build the tower higher without toppling it over, by removing a lower block that is being affected by a problem and adding it to the top in the form of a solution.</p>
<p><b>Developing Student Learning</b> ("Action" part of lesson, How does the lesson develop? What will the teacher/students be doing? Key questions? Include assessment details as appropriate.)</p>		<p>In groups of 4</p> <p><b>Part 1.</b> Explain why rectangular prisms are often used for packaging.</p> <p><b>Part 2.</b> Brainstorm the designs of some Indigenous tools and structures, and then explain the purposes of these designs.</p> <p>A. Tipi, B. Canoe, C. kayak, D. ulu, E. Winter coats and boots</p> <p>You can use the internet and other resources to research images and other information. Students can draw, or make a model of at least one design.</p> <p>Each group will share back with the class what they have done. Think about how these were made and how they are being made today.</p>
<p><b>Consolidating Student Thinking</b> (Summarization of learning, application to other learning, reporting on learning)</p>		<p>As a whole group we will reflect on the lesson with this question. Why is balance important?</p> <ul style="list-style-type: none"> <li>- In the world between us and the earth</li> <li>- Our daily activities</li> <li>- The structures that we create</li> </ul>

**Accounting for Learner Diversity:**

Students are given the freedom to choose which design they want to focus on. They can choose their own design and work at their own pace. Flexible grouping, with an option of independent working, in a separate space.

**Materials Needed:**

Computer/ tablets with internet access and design software

Concrete manipulatives (cubes, popsicle sticks, paper, tape, glue, cardboard etc.)

**References:**

Ontario 12 & 12 Mathematics curriculum  
TRACKS workshop

## **Post-Lesson Reflections**

*What worked? What didn't, and why? What to change for next time?*

I will reflect upon these questions after each lesson.

What problems might I experience and why?

What could I have done differently?

What could I learn from this experience that might help me in the future?

Was my presentation clear? Were the students involved? How was my pacing?

Does my method of assessment measure what I want? How did the class do? What should I change for next time?