

Subject (grade): Workplace and Apprenticeship Math 20 (WA20)

Lesson Title: Start-up & Planning Stage of your Place

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Desired Results:

Objectives/Outcome(s)/Indicator(s):

20.10: Extend and apply proportional thinking to solve problems that involve unit analysis and scale.

(f) Determine, using proportional reasoning, the dimensions of objects, given scale drawings or models.

(g) Construct models of 3-D objects, given the scale.

(h) Draw, with or without technology, a scale diagram of 3-D objects.

Key Understanding ('I can' statements):

1. I can do this individually, with partners, or in a group.
2. I can choose a place to recreate.
3. I can choose a scale.
4. I can design the structure.

Assessments:

In this lesson I will be assessing:

1. Assessment of Learning (*Formative*): I will be assessing the students (if they are in groups/partners) involvement in this project. Assessing teamwork, by how involve they are in doing the project (**See rubric section 6.1**). If students are by themselves, I will be assessing their focus on their own project and if they ask for help from others (**See rubric section 6.2**).
2. Assessment of Learning (*Formative*): I will be assessing the student's ability to problem solve in mathematics. I will also be assessing their place, whether the students chose a complex structure that is hard to build in Minecraft to a basic structure that only involves one square room (**See rubric section 1**).
3. Assessment of Learning (*Summative*): This will be on the presentation, at the end. The final thing I will be assessing is the students scale, like is it relevant to their structure, like it will be 1:1 or is it irrelevant to their structure, like 1000:10, this will be hard to recreate (**See rubric section 1**).

Procedures:

1. In this project you will do this individually, partners or in groups of three to four. Everyone will choose a place to explore, and if you are in partners or groups you will decide on what you will recreate in Minecraft.

2. First, what you will need to do is create a scale from the actual to Minecraft. Then, you will design a plan to recreate the building (if you are in a group) or a room (if you are by yourself or with a partner).
3. This could take two to three classes to choose a place and design the Minecraft structure of the place.
 - a. List the students in the groups (see in materials for the document for listing)
 - b. Record what students will be recreating.

Additional Procedures:

If students finished the planning stage of this project, continue to the lesson two, "Finding Surface Area & Volume of your Place"

Materials:

The students will need the following document:

- Minecraft Plans (either Group (which includes single room) or Individual)

This will be where all the work will be done:

- Scale
- Surface Area
- Volume
- Cost
- Loans
- Laptop (if students want to do it online)
- Workbook

Yourself (teacher) will need:

- Listing

Resources:

Chapter Five of the textbook: Scale Representation.

5.1: Scale Drawings and Models.

5.2: Two-Dimensional Representation.

5.3: Three-Dimensional Representation.

Minecraft Plans (**Found under Worksheets**) at www.yarnbender.ca/edtc/recreation-in-minecraft

How to go about using Microsoft Word or Google Docs to create your design:

[Recreation in Minecraft](#)

Adaptions/ Differentiations:

Some adaptations/differentiations for this lesson:

- Allowing students to type up their plans inside Word or Docs.
- If students need more time to finish their plan give them that extra time to work on it.
- If students are having trouble finding a scale to use, help them to figure out that scale.
- If a student is having trouble deciding on what place to recreate, give them examples of what to do. (Ex. A store, Park, Greenhouse, or Classroom)

Management Strategies:

Here are some management strategies for this lesson:

- If groups are fooling around and not focusing on their plans:
 - Tell them they will need to do it individually, or
 - You can start working.