

# Lab Template

**Text:** **CORD Math (green book)**

**Volume:** \_\_\_\_\_ **Chapter:** \_\_\_\_\_

**Unit number:** 9 **Title of unit:** Using Ratios and Proportions

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## Attach the Following Documents:

1. Lab Instructions
2. Student Handout(s)
3. Rubric and/or Assessment Tool

**Short Description (Be sure to include where in your unit this lab takes place):**

Students will be asked to create a scale drawing of the classroom. This lab will be used to reinforce the use of proportions to find unknown measurements and create scale drawings. This activity will be used after the lesson on comparing ratios is taught.

## Let's Scale Down

### LAB PLAN

**TEACHER:** (*Teacher Prep/Lab Plan*)

- ⤴ **Lab Objective:** Students will use the concept of comparing ratios and write proportions to determine scale measurements and draw a scaled down version of the classroom.
- ⤴ **Statement of prerequisite skills needed** (*Vocabulary, Measurement Techniques, Formulas, etc.*) Students will need to understand how to accurately measure spaces and objects both in reality and on graph paper.
- ⤴ **Vocabulary:** proportion; ratio; equal ratios; similar figures
- ⤴ **State Standards addressed:** (*Highlight "Green" Standards, you may use your District's Power Standards if applicable*)
  - ⤴ **Math:**
    - ⤴ A1.1.A Select and justify functions and equations to model and solve problems.
    - ⤴ A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.
    - ⤴ A1.2.B Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.



# Let's Scale Down

## Group Instructions

Your task is to take accurate measurements of the entire classroom:

- Floor
- Walls
- Location of permanent structures
- Doors and windows
- Location of teacher's desk
- Student's desks, decorative items, and ceiling do not need to be included

Using the data your group has gathered, each of you will create your own scaled drawing that will fit on the graph paper provided. You may use more than one sheet but the floor and walls must each fit on one sheet.

You will be working with your group to make all major decisions:

- Who will perform different tasks – do you all need to measure different parts of the room together or can you divide and conquer?
- Do you need to measure every part of the room or can you trust that some parts will be the same? Are all corners  $90^{\circ}$  or do you have more than four walls?
- How will your group record the different information you are gathering?
- What type of scale will you use to create your scaled drawing?
- Your group will have only one class period to do your measurements. How will you pace yourselves to complete all your measurements in that time?
- How will you handle any other decisions that have to be made?

### Assessment Tool used in this Lesson

Lab Scoring Rubric:

Item:			
Group worked cooperatively	3	2	1
Group task was completed within time limit	3	2	1
Student worked well within the group	3	2	1
Student participated in making group decisions	3	2	1
Student used the information and group decisions to make an accurate scale drawing	3	2	1
Student completed the drawing within time limit	3	2	1