Lab Framework

Text: CORD or Business & Personal Finance textbook

Unit number and title:

Short Description: Unit 9 Ratios & Proportions

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Lab Title

Using Ratios to Make Scale Drawings

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
  Compare ratios & proportions; recognize and write proportions from given information; solve proportions in practical, work-related problems.
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
  Understand ratios; the formula LxW=A; understand how proportions relate
- **Vocabulary**
  Proportion
  Ratio
  Scale Drawing
  Floor Plan
  Length x Width=Area
  CFO

- **Materials List**
  Drawing Kit
  Measuring Tape
  Graph Paper
  Pencil
  Ruler
  Calculator
- **State Standards addressed**
  Math: 7.2.D Make scale drawings and solve problems related to scale.
  7.2.B Solve single- and multi-step problems involving proportional relationships and verify the solutions.
  Reading: (Reading)
  Writing: (Writing)
- **Leadership Skills**
  Collaboration; making decisions based upon what is best for the whole
- **SCAN Skills/Workplace Skills**
  1.2 and 1.3
- **Set-up information**
  You will need to be sure you have enough measuring tapes, drawing kits, and graph paper.

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**
  a. May work independently or in groups
  b. Groups may turn in one scale drawing but both must show calculations on a sheet of paper
  c. Both must give input for final drawing
- **Teacher Assessment of student learning** (scoring guide, rubric)
  a. Scoring rubric for calculations and drawing will be used
  b. Visual observations while lab is being completed
- **Summary of learning** (to be finished after student completes lab)
  -discuss real world application of learning from lab
  -opportunity for students to share/present learning
  -difficulty of trying to make work spaces equal but efficient and creating an odd space (team space) within even spaces (employee work spaces)

- **Optional activities**
  Use the space to create an ergonomic area created on "teaming" concepts
  Work in larger groups and deal with multiple ideas and conflict
- **Career Applications**
  Entrepreneurial ideas of creating your own business and the space within it
  Following through on a task given to you by your superior

LAB TITLE: Using Ratios to Make Scale Drawings
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  You are the manager of the Finance Department at your company. Your department is moving to a new floor in your building and the floor space is open. Your CFO has instructed you to create working spaces for your 10 employees on the new floor and include a team area. In this activity, you will use proportions to make the scale drawing of the floor using the classroom floor. You may also use the table/desk space to gauge proportions for your employee working spaces.

- **Grouping instructions and roles**
  You can work independently or in pairs. Choose your own groups.

- **Procedures** – steps to follow/instructions
  a. Measure the length and width of the classroom. Write these measurements down on a sheet of paper.
  b. Measure the length and width of one table/desk space you wish to use in your drawing. Write these measurements down on a sheet of paper.

- **Outcome instructions**
  a. Use the drawing kit to draw the floor plan of your office floor using the classroom measurements. Use a scale of 1 inch to 4 feet to draw your floor space. Use a scale of ½ inch to 2 feet to draw your employee work spaces.
  b. Be sure to make effective use of your space and create good workable areas for your employees.

- **Assessment instructions** (peer-teacher)
  Once you have completed your drawing, have a peer evaluate the following items:

  1. Are your drawings to scale according to the ratios given?
  2. Did you create 10 employee work spaces?
  3. Did you create a team work area in your drawing?
  4. Did you use the whole space effectively?

Lab Data Collection

Student: _____ Date: _____

Unit: _____

Lab Title:

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)