

Lab Framework

Text: CORD

Unit number and title: Unit 10 Working with Scale Drawings

Short Description: Students will Learn:

1. How to read a drawing that uses a scale
2. How to use measuring and drafting instruments to develop a scale drawing
3. How to layout drawing for a blueprint for a house floor plan.

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Contact Information: La Center High School

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Lab Title

Reading and making a scale Drawing

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
 1. Reading and using a scale drawing
 2. Understanding a scale drawing
 3. Locating the related information on a scale drawing and maps
 4. Make a simple scale drawing using drafting instruments
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
 - Unit 1-Learning Problem- Solving Techniques
 - Unit 2-Establishing Answers
 - Unit 3-Measuring in English
 - Unit 5-Working with Lines and Angles
 - Unit 9-Using Ratios and Proportions
- **Vocabulary**
 - Actual –Size Model
 - Blueprint
 - Dimensions
 - Key to a Scale
 - Proportion
 - Ratio
 - Reduced Size drawing
 - Scale of a Drawing
 - Scale-up model
- **Materials List**
 - Drafting board
 - Architectural scale
 - 30 /60 degree Triangles
 - T square
 - Paper
 - Architectural template

- **State Standards addressed**

Math:

Unit 1-Learning Problem- Solving Techniques

Unit 2-Establishing Answers

Unit 3-Measuring in English

Unit 5-Working with Lines and Angles

Unit 9-Using Ratios and Proportions

- **Leadership Skills**

In the next days the students in a Lab will develop a house floor plan using drafting equipment

Navigation 101 is being presented to the students

Skills USA leadership is encouraged for students in all CTE programs

Guest speaker that relates to the students activity

Set-up information

1. Introduction of drafting equipment and how each is used
2. Students will practice using equipment with introduction exercises.
3. Architectural scale will be reviewed in discussion and students will do a
4. handout exercise using the Scale and how it relates to the ruler
5. Review of measuring will be the first thing students must grasp.
6. Placing a border line on drafting paper measuring in from each edge of with a border line $\frac{1}{2}$ inch from each edge.
7. Locating the floor plan on the paper by locating the center of the paper.
8. Lightly draw a diagonal lines across opposing corners
9. Students will use a handout to help them layout the floor plan
10. Students will draw the outer walls first and then the wall thickness.
11. The additional item on the floor plan will follow with about a two week time Frame to complete the assignment.

Teacher Assessment of student learning (scoring guide, rubric)

Student assessment will be on the following:

1. Participation point each day of 10 points
2. Completion of assignments and handouts
3. Completion of the floor plan
4. Examination of the unit

Summary of learning

1. discuss real world application of learning from lab
Invite a Architect to come in for a couple of session to help and encourage students
2. opportunity for students to share/present learning
 - a. How many didn't think you could do this activity?
 - b. Relate this activity to the CAD program of today and are draftman still needed.
 - c. What other occupations relate to drafting.

Optional activities

1. Students will visit a house under construction and see how the floor plan is used for layout
2. Relate other occupation and other occupations use scale drawings

- **Career Applications**

House Construction

Architecture
Sheet metal layout
Draftsman in other occupations
Auto Design
Heavy duty construction
Engineering

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