

Lab Template

Text: CORD Applied Mathematics

Volume: _____ Chapter: _____

Unit number: Unit 16 Title of unit: Solving Problems that Involve Linear Equations

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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 use price and volume of beverages to graph a line and calculate an equation.

Ratios in Advertising

LAB PLAN

TEACHER: (Teacher Prep/Lab Plan)

- **Lab Objective**
Compute Ratios and make inferences from their results
- **Statement of prerequisite skills needed** (*Vocabulary, Measurement Techniques, Formulas, etc.*)
Problem Solving Techniques
Estimating Answers
Using formulas to solve problems
- **Vocabulary**
Linear Equations
Variables
Coefficients
Constants

State Standards addressed: (Highlight "Green" Standards, you may use your District's Power Standards if applicable)

- **Math:**

A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.

A1.3.B Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.

A1.4.A Write and solve linear equations ~~and inequalities in one variable~~

A1.4.B Write and graph an equation for a line given the slope and the y-intercept, the slope and a point on the line, or two points on the line, and translate between forms of linear equations.

A1.4.C Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.

A1.6.B Make valid inferences and draw conclusions based on data.

A1.6.E Describe the correlation of data in scatter plots in terms of strong or weak and positive or negative.

- **Reading:**

- **Writing:**

- **Leadership:** Students will work in groups of two...a recorder and a detective

- **SCAN Skills/Workplace Skills:**

- **Teacher Preparation:** (What materials and set-up are required for this lesson?)

- Research Shoe sizes and Ages of famous people and athletes

- **Lab Organizational Strategies:**

- **Grouping/Leadership/Presentation Opportunities:**

- **Cooperative Learning:**

- **Expectations:** I would like students to make predictions about what kind of advertisements they will find in each magazine

- **Time-line:** one day

Ask students for the following:

*Who are your favorite celebrities? Sports Athletes? Do you think there is a relationship between their shoe size and their age?

Follow Lab instructions below.

- **Post Lab Follow-Up/Conclusions** (to be covered after student completes lab)

- **Discuss real world application of learning from lab:**

Finally, students will be given a few problems to solve and will write some conclusions about the lab.

Then there will be a wrap up discussion about future predictions.

What would you expect to happen with other celebrities, students or athletes?

- **Career Applications:**

Which companies or professions would be interested in knowing about this information? How would someone use this information?

- **Optional or Extension Activities:**

Ratios in Advertising

Name of Recorder: _____

Name of Detective: _____

Directions:

1. Pair up
2. Choose a Recorder and a Detective
3. Record your names above
4. Grab a ruler and some graph paper
5. Using the internet, determine the shoe size and height for 5 celebrities, 5 athletes and 5 students in the class.
6. Record the names, heights and shoe sizes below.
7. Record the ages and shoe sizes on a graph
8. Draw a line of best fit
9. Write an Equation for your Line
10. Write out your conclusions.
11. Each student will turn in their own packet.

| | Name | Height | Shoe Size |
|------------------|------|--------|-----------|
| Celebrity | | | |
| Celebrity | | | |
| Celebrity | | | |
| Celebrity | | | |
| Celebrity | | | |
| Athlete | | | |
| Athlete | | | |
| Athlete | | | |
| Athlete | | | |
| Athlete | | | |
| Student | | | |
| Student | | | |
| Student | | | |
| Student | | | |
| Student | | | |

1) What did you discover from this exercise? (use complete sentences)

2) What would you expect to happen with other celebrities, athletes or students?

3) Which companies or professions would be interested in knowing about this information?

4) How would you change this activity?

5) You are a buyer for Nordstrom Shoes. How can you use the information above?

Rubric For unit 16 Shoes and Height

Name: _____

Date: _____

Grade: _____

Teacher: _____

| | | Criteria | | | | Value |
|--|--|---|--|--|-----|-------|
| | 1 | 2 | 3 | 4 | | |
| Problem Solving | Little or no understanding of the problem is evidenced. | Numerous errors when solving problems. | Few errors when solving problems. | No errors when solving problems. | --- | |
| Math Content | Demonstrates little or no knowledge or application of math skills. | Demonstrates a limited knowledge and application of math skills. | Demonstrates a general knowledge and application of math skills. | Demonstrates a clear knowledge and application of math skills. | --- | |
| Math Communication | Inaccurately communicates solutions to problems and concepts. | Limited communication of solutions to problems and concepts. | Satisfactorily communicates solutions to problems and concepts. | Accurately communicates solutions to problems and concepts. | --- | |
| Presentation | The reader is unable to follow the steps taken in the solution. | Solution is difficult to follow at times. | Solution is presented in a logical manner. | Solution is presented in an easy follow step-by-step model. | --- | |
| Use of Mathematical Terminology | No mathematical terminology is used or attempted. | Some mathematical terminology is presented, but not correctly used. | Mathematical terminology correctly used. | Mathematical terminology is prevalent and used correctly. | --- | |
| | | | | Total:--- | --- | |

TEACHER COMMENTS