Lesson Plan

Text: Cord

Unit number and title: Unit 9-Ratios & Proportions

Short Description: Students will be working Ratios and proportions in this fun and engaging lab so they have a basic understanding of how to expand the needed recipe to have enough pizza to feed various group sizes.

Developed by: Tim Haskin

Contact Information: HaskinL@comcast.net

Date: June 23, 2010

Food/Pizza Preparation from Ratios & Proportions

LESSON PLAN

TEACHER: Teacher Prep/ Lesson Plan

1 Lesson Objectives

To help students understand the importance of understanding why we it is necessary to understand ratio and proportions in preparing food for various amounts of people.

Statement of pre-requisite skills needed. Students will need to have basic understanding of calculating ratio and proportion.

2 Vocabulary

Ratio, Proportion, Ingredients, Similar,

3 Materials List

8.5x11 colored construction paper, scissors, paper with lab instructions provided by the teacher

4 State Standards addressed

Math: 7.2.B- Solve single- and multi-step problems involving proportional relationships and verify the solutions. 7.2.D.- Solve single- and multi-step problems involving conversions within or between measurement systems and verify the solutions.

Reading: Grade 10. 1.2.2. Apply strategies to comprehend words and ideas.

Writing: Grade 10. 3.3. Knows and applies writing conventions appropriate for the grade level.

5 **Set-up information (Remind students to follow these basic rules.)** The students will work in groups of 4 at their desks and the instructions to completing the lab will be placed on the overhead.

a. The students will form groups of 4 students per group. The teacher will randomly select a student from each group to be group leader.

b. The group will be required to complete their activity, having each group leader delegate who will be responsible for recording/writing the assignment.

c. The group leader will be responsible for ensuring that all the names are on the lab

d. paper and it is turned in on time. The leader will be responsible for selecting each delegate from their group to place the answers to the lab questions on the board and ensure that person is prepared to discuss it with the class if called answer on by the teacher.

e. The owner of your Big Bob's pizza gave you the ingredients/recipe for your favorite pizza. You plan to have a party and need to know how many people you can have at your party based on the amount of money you have to spend on the pizza ingredients. You have $15 to spend on pizzas.

You know from experience that your friends eat 4 slices of pizza.

Use the recipe for Pepperoni Pizza on the chart below and determine the amount of ingredients you will need to make the quantities that are indicated.

1 Large Pizza Makes 8 servings	**Number of Servings**			
Ingredient	**8**	**16**	**24**	**32**
Flour	1 cup			
Cheddar Cheese	2cups			
Romano Cheese	2cups			
Tomato Paste	1can			
XYZ Pepperoni	1 pack			
Cost per Pizza	$4.25			

A. Calculate the difference amounts of ingredients needed based on the servings located in the above table. ?

B. If a large pizza makes 8 servings and your each friend eats 4 slices of pizza, how many people will 1 pizza feed?

C. How many people can you feed with the $15?

D. Write in the ingredients for the servings sizes in ratio form :

8 servings to 1 pizza's_____
8 servings to 2 pizza's_____
8 servings to 3 pizza's_____
8 servings to 4 pizza's_____

5 **Teacher Assessment of student learning (scoring guide, rubric)**(peer-teacher)
The teacher will conduct ongoing assessments with the class you walk around the classroom evaluating the group effort. The teacher will engage the class in a general discussion about the answer to the lab problems and then the answers posted on the board and worksheet turned in for each group.
Grading Rubrics.
4 Questions, 15% possible for each questions & 40% for Group effort

A. 15% --- 5, 10, 15 Points
B. 15% --- 5, 10, 15 Points
C. 15% --- 1, 10, 15 Points
D. 15% --- 5, 10, 15 Points
_____ Point sub-total

Group Effort/Participation
20% ---- Teacher evaluation 5, 10, 15, 20 Points
20% ---- Student evaluation 5, 10, 15, 20 Points
_____ Points sub-total

Total points for the Lab _____/ 100 = _____%

6.

Summary of learning

The leader from each group will select a person to write the answer (a-d) on the board and be prepared to discuss the findings with the class if randomly called upon. Their will be a general call/group discussion of how they feel this lab applies to the real world and their lives in business, home or other situations

7. Career Applications. This lab is great in showing students why it is so important to understand ratios and proportions in their everyday lives. It can be used in food preparation, construction, automotive, farming etc.

Lab Framework

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Food/Pizza Preparation from Ratios & Proportions

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

1 **Lab Objective**

To help students understand the importance of understanding why we it is necessary to understand ratio and proportions in preparing food for various amounts of people.

Statement of pre-requisite skills needed. Students will need to have basic understanding of calculating ratio and proportion.

2 **Vocabulary**

Ratio, Proportion, Ingredients, Similar,

2 **Materials List**

8.5x11 colored construction paper, scissors, paper with lab instructions provided by the teacher

3 **State Standards addressed**

Math: 7.2.B- Solve single- and multi-step problems involving proportional relationships and verify the solutions. 7.2.D.- Solve single- and multi-step problems involving conversions within or between measurement systems and verify the solutions.

Reading: Grade 10. 1.2.2. Apply strategies to comprehend words and ideas.

Writing: Grade 10. 3.3. Knows and applies writing conventions appropriate for the grade level.

4 **Leadership Skills**

Basic Skills

A. Locates, understands, and interprets written information and documents – including manuals, graphs and schedules – to perform tasks

B. Learns from text by determining the main idea or essential message

C. Identifies relevant details, facts and specifications

D. Infers vocabulary, and judges the accuracy, appropriateness, style and plausibility Of reports, proposals, or theories of other writers.

5 **SCAN Skills/Workplace Skills**

Real world application in working with ratio and proportions when preparing Food dishes at home or at work. Learning to follow precise step by step instructions so that the end result is realized (good tasting food).

6 Set-up information

The students will work in groups of 4 at their desks and the instructions to completing the lab will be placed on their worksheet. overhead.

7 **Lab organization -**45 min.

a. The students will form groups of 4 students per group. The teacher will randomly select a student from each group to be group leader.

b. 2. The group will be required to complete their activity, having each group leader delegate who will be responsible for recording/writing the assignment.

c. The group leader will be responsible for ensuring that all the names are on the lab paper and it is turned in on time.

d. The leader will be responsible for selecting each delegate from their group to place the answers to the lab questions on the board and ensure that person is prepared to discuss it with the class if called answer on by the teacher.

7. Teacher Assessment of student learning

The teacher will conduct ongoing assessments with the class you walk around the classroom evaluating the group effort. The teacher will engage the class in a general discussion about the answer to the lab problems and then the answers posted on the board and worksheet turned in for each group.

8. Summary of learning (to be finished after student completes lab)

Their will be a general call/group discussion of how they feel this lab applies to the real world and their lives in business, home or other situations.

9 Career Applications

This lab is great in showing students why it is so important to understand ratios and proportions in their everyday lives. It can be used in food preparation, construction, automotive, farming etc.

LAB TITLE:

Unit 9- Preparing Food-Ratio & Proportion

STUDENT INSTRUCTIONS:

1 Statement of problem addressed by lab

Within this lab, you will taking a recipe and calculating by ratio analysis the various amounts of ingredients required to make your favorite pepperoni pizza for a different numbers of people you are thinking about having at your birthday party. You will also calculate the cost per pizza and the ratio of cost per pizza.

2 Grouping instructions and roles

a. You will form groups of 4 students per group. The teacher will randomly select a student from each group to be group leader.

b. The group will be required to complete their activity, having each group leader delegate who will be responsible for recording/writing the assignment.

c. The group leader will be responsible for ensuring that all the names are on the lab paper and it is turned in on time.

d. The leader will be responsible for selecting each delegate from their group to place the answers to the lab questions on the board and ensure that person is prepared to discuss it with the class if called answer on by the teacher.

3 **Procedures**

1. The students will work in groups of 4 at their desks and the instructions to completing the lab on their worksheet.

Ratio Lab Activity (Worksheet)

The owner of your Big Bob's pizza gave you the ingredients/recipe for your favorite pizza. You plan to have a party and need to know how many people you can have at your party based on the amount of money you have to spend on the pizza ingredients. You have $15 to spend on pizzas.

You know from experience that your friends eat 4 slices of pizza.

Use the recipe for Pepperoni Pizza on the chart below and determine the amount of ingredients you will need to make the quantities that are indicated.

1 Large Pizza Makes 8 servings	**Number of Servings**			
Ingredient	**8**	**16**	**24**	**32**
Flour	1 cup			
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Cost per Pizza	$4.25			

A. Calculate the difference amounts of ingredients needed based on the servings located in the above table. ?

B. If a large pizza makes 8 servings and your each friend eats 4 slices of pizza, how many people will 1 pizza feed?

C. How many people can you feed with the $15?

D. Write in the ingredients for the servings sizes in ratio form :

8 servings to 1 pizza's_____
8 servings to 2 pizza's_____
8 servings to 3 pizza's_____
8 servings to 4 pizza's_____

4 **Outcome instructions**

The leader from each group will select a person to write the answer (a-d) on the board and be prepared to discuss the findings with the class if randomly called upon.

5 **Assessment instructions** (peer-teacher)

The teacher will conduct ongoing assessments with the class you walk around the classroom evaluating the group effort. The teacher will engage the class in a general discussion about the answer to the lab problems and then the answers posted on the board and worksheet turned in for each group.

Grading Rubrics.

4 Questions, 15% possible for each questions & 40% for Group effort

A. 15% --- 5, 10, 15 Points
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_____ Point sub-total

Group Effort/Participation

20% ---- Teacher evaluation 5, 10, 15, 20 Points
20% ---- Student evaluation 5, 10, 15, 20 Points

_____ Points sub-total

Total points for the Lab _____/ 100 = _____%

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)