Cross References to Unit(s)/Concepts

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Lab Framework

Lab Title
Mixed Nuts Lab (Oh Nuts!)

Submitted by: Terri Jacobsen, Kentwood High School
Short Description: Unit 9 Using Ratios and Proportions

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- Lab Objective
  The student will be able to solve problems involving ratios

- Statement of pre-requisite skills needed (i.e., vocabulary, measurement techniques, formulas, etc.)
  1. Add, divide, subtract, and multiply whole numbers, fractions and decimals
  2. Understand simple arithmetic operations
  3. Enter numbers, fractions, and decimals in a scientific calculator and read the output

- New Vocabulary
  1. ratios

- Materials List
  Can of mixed nuts
  Lab worksheet
  calculator

- GLE's addressed
  - 1.1.1 Understand and apply scientific notation
  - 1.1.4 apply understanding of direct and inverse proportion to solve problems
  - 2.2.2 Apply mathematical tools to solve the problem
  - 3.2.1 Apply skill of conjecturing and analyze conjectures by formulating a poof or constructing a counter example
  - 3.2.2 Analyze information to draw conclusions and support them using inductive and deductive reasoning

- Set-up information
  Students will need cans of mixed nuts, room to work in groups to count the data (nuts)

- Lab organization(-Grouping/leadership opportunities/cooperative learning expectations; **-Timeline required)**
  Students will be working in cooperative learning groups to classify and count the nuts. They will work individually to complete the worksheet and solve the proportion problems.

- Teacher Assessment of student learning(scoring guide, rubric)
  Student worksheet
  Participation during teamwork
  Timeline: One class period

- Summary of learning(to be finished after student completes lab)
  -discuss real world application of learning from lab
  -opportunity for student to share/present learning
  Students will discuss how proportions are used in other real life situations, such as cooking, scale drawings, and preparing/drawing blueprints.

- Optional activities
  Students can create their own recipes for mixed nuts, using other mixes.

- Career Applications
  Cooking
  Construction
  Finance

LAB TITLE: Mixed Nuts
STUDENT INSTRUCTIONS:

- Statement of problem addressed by lab
  You are going to determine the ratio of different types of nuts in a can of mixed nuts

- Grouping instructions – roles
  Your will be divided into groups of five. You are expected to record the results of others in your group and use your results to complete the worksheet individually.

- Procedures – steps to follow/instructions
  1. You will be divided into teams of five
  2. Each team will get one can of mixed nuts
  3. You will need to count the number of different kinds of nuts in the can (cashews, peanuts, brazil nuts, walnuts, etc.,)
  4. Record your results for the types of nuts

- Outcome instructions
  Complete the team activity
  Using the data, complete the worksheet

- Assessment instructions(peer-teacher)
  1. Your worksheet will be collected and checked
  2. Your participation will be monitored during the lab

Oh Nuts!

Lab Data Collection

Student: _____ Date: _____

Unit: ____Unit 9 Ratios and Proportions_____

Lab Title: Mixed Nuts

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data (count each nut)

Numbers of nuts:

Peanuts_____
Cashews_____
Almonds_____
Brazil nuts_____
Hazelnuts_____
Pecans_____

Total nuts:_____

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

Write the following ratios:

Peanuts to total nuts_____
Cashews to peanuts_____
Cashews to total nuts_____
Hazelnuts to peanuts_____
Hazelnuts to total nuts_____

Summary Statement:

Other Assessment(s)