Lab Framework

Text:Cord

Unit number and title: Unit 9 Ratios and Proportion

Short Description: Each student team belongs to a semi-professional basketball team that just received a sponsorship with a major clothing company. The team will use ratios and proportions to decide how much each player will receive out of the total sponsorship. The sponsors want the pay to be based on the height of each player because they believe that taller players are better and will receive more attention from the public.

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Lab Title
Baseball Team Sponsorship

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

  Students are going to figure out ratios and proportions for their share of a team sponsorship with a clothing manufacturer, based on their individual heights.

- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)

  Measure a person's height

  Calculate ratios and proportions

- **Vocabulary**

  Ratio

- **Materials List**

  Tape Measure or ruler or yard stick

  Basketball Team Sponsorship Worksheet

- **GLEs (State Standards) addressed**

Math: 1.1.4   Understand the concept of inverse proportion and apply direct and inverse proportion. W

     2.2.4   Determine whether a solution is viable, is mathematically correct, and answers the question(s).

     3.3.2   Evaluate reasonableness of results. W

     5.3.2   Understand that mathematics is used in many occupations or careers.

     Reading: (Reading)

Writing: 2.4.1 Produces documents used in a career setting.

     3.3.1 Uses legible handwriting.

- **Leadership Skills**

  Teamwork

  Organizing a group

- **SCAN Skills/Workplace Skills**

- **Set-up information**

Lab organization(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**

Students will work in groups of 4 to 6. This would be a good lab later in the unit or at the end of the unit. This lab can be done during one class hour (55 minutes).

- **Teacher Assessment of student learning** (scoring guide, rubric)

Students will be assessed with teacher observation of teamwork (and individual participation), student group self-assessment of participation, and thoroughness and accuracy of ratio and proportion calculations.

- **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

Each team will share their conclusion and supporting data with the class. The teacher will start a discussion of possible career applications for this lab (data based on scoring, ranking, years of experience,... etc.

- **Optional activities**

How would the sponsorship payments change if the group now has an 8 foot player on their team (or a 5 foot tall player)?

- **Career Applications**

Statistician, payroll clerk, analyst, business manager, stockbroker, farmer, sales manager, sales clerk, college admissions officer, etc.

LAB TITLE: <u>Baseball Team Sponsorship</u>

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**

  Each student team belongs to a semi-professional basketball team that just received a sponsorship with a major clothing company. The team will use ratios and proportions to decide how much each player will receive out of the total sponsorship. The sponsors want the pay to be based on the height of each player because they believe that taller players are better and will receive more attention from the public.

- **Grouping instructions and roles**

  Students in groups of 4 to 6.

- **Procedures** – steps to follow/instructions
  1. Within teams, players are to measure their heights, using tape measures provided. Players need to record each individual person's height on their team.
  2. Teammates need to write ratios for each player of their team based on their heights. Add the ratios to be sure the numbers are correct.
  3. Next, the team needs to create a proportion formula to determine what each player is to be paid. After all shares have been decided, re-add each player's portion to be sure it ads up to $1,500,000.
  4. Players discuss how this form of pay is beneficial or unfair. What other measures could be used with real players to fairly disperse a sponsorship like this (playing skills, experience, fame, value of player's trading cards, age, shoe size,… etc.)

- **Outcome instructions**

  Students are going to use their skills of measurement, ratios, and proportions to determine how much money each player should receive from a team sponsorship based on their height. Group discussion of procedures and other, real world ways of deciding proportions like this will help them relate it to real life situations.

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

  Students will be assessed on the validity of their ratio and proportion calculations, individual participation within the team, and by teacher observation. Students are going to use their skills of measurement, ratios, and proportion to figure out how each player will receive out of the team's new sponsorship.

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)