

Lab Framework

Text:CORD

Short Description: Each student team belongs to a semi-pro football team that just received a sponsorship with a major shoe 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 speed of each player because they believe that slower players are easier for the fans to relate with and will receive more attention from the public.

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Lab Title

Fast as Lightning Football Team

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

Students are going to figure out ratios and proportions for each individual's share of a team sponsorship with a shoe manufacturer, based on their proportional speed for players at their position (*in their group*).

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

Time a persons' individual 40 yard dash time

Calculate ratios and proportions

- **Vocabulary**

Ratio

Proportion

Sponsorship

- **Materials List**

Stop Watches (*1 per group*)

Scratch Paps for time slips

Football Team Speed Worksheet

- **State Standards addressed**

A1.1.A – Problem solving

A1.2 – Numbers, Expressions, and Operations

A2.6 – Probability, data, and distributions

Reading: (Reading)

Writing: (Writing)

- **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 (50 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 a player who runs a 4.5 second 40 yard dash or a 9.5 40 yard dash?

- **Career Applications**

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

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LAB TITLE: Fast as Lightning Football Team

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**

Each student team belongs to a semi-pro football team that just received a sponsorship with a major shoe 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 speed at each position, because they believe that slower players are easier for the fans to relate with 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 time their 40 yard dash times, using stop watches provided by teacher. Players need to record each individual person's time in their group.
2. Teammates need to write ratios for each player of their team based on their speed. 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 adds up to \$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 (inverse speed, weight, player statistics, experience, popularity, 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 speed. 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.

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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)

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