

Proportion Problems

Summary

Solve a wide variety of problems using ratios and proportional reasoning

Main Core Tie

Mathematics Grade 6

[Strand: RATIOS AND PROPORTIONAL RELATIONSHIPS \(6.RP\) Standard 6.RP.3](#)

Materials

Calculators

- [Solving Proportions Foldable](#)

Literature: "If Only You Hopped Like A Frog" (David Schwartz), measuring tapes or meter sticks

Worksheets: [Proportion Problems](#), [If Only You Could...](#)

- [Three in a row from attached choice board](#)

Background for Teachers

Enduring Understanding (Big Ideas):

Proportional reasoning is essential in problem solving

Essential Questions:

How can proportions be used to solve problems?

Skill Focus:

Solve problems using proportions

Vocabulary Focus:

Ratio, numerator, denominator, proportion

Ways to Gain/Maintain Attention (Primacy):

Make a conjecture, use calculators, cooperative activity, writing, literature, student choice

Instructional Procedures

Starter:

Papa Johns is offering 3 medium pizzas for \$20. Little Caesar is offering five pizzas for \$30.

Which is the better rate?

Arrange these numbers in numerator and denominator positions to make four different proportions.

1, 2, 4, 8

Lesson Segment 1: How can a Proportion be used to solve problems?

Show students the procedure for solving a proportion using cross products to set up an equation.

Teach them the following movement/music activity.

Tune: Stayin' Alive

Lyrics: Multiply, Multiply! Then you divide. Then you divide.

Multiply, Multiply! Then you diviiiiiiiiiiiiide!

Movement: While singing "Multiply, Multiply", use arms and pointing finger as in a disco dance to show cross products. When you sing, "Then you divide. Then you divide", bring arms straight across to show a division bar like this:

Help them complete the Solving Proportions Foldable (attached).

Work with the students in setting up a proportion using a variable as you model problems 1-4 on the Proportion Problems worksheet. Then, do four corners where a student from each team goes to a corner to meet with others there to set up and solve one of the remaining problems.

Persons # 1 from each team does problem # 5

Persons # 2 from each team does problem # 6

Persons # 3 from each team does problem # 7

Persons # 4 from each team does problem # 8

If you have more than four people on a team, have those students meet together to choose any one of the problems 5-8 and change the numbers to set up a different problem.

Lesson Segment 2 : Proportion Problem Solving Applications

Read the book, "If Only You Hopped Like A Frog" (David Schwartz)

Give students measuring tapes or meter sticks. Do the worksheet, If Only You Could..., together by reading each problem, discussing what information they need to know about their own measure.

Have them set up a ratio for the creature and a ratio for themselves using a variable to solve for what they could do if only...

Give each student a Choice Board copy. Discuss the choices on the Choice Board. They must do the one in the middle and any other two to get three in a row. They can use the back of the page for any writing or drawing they do for their choices.

Assign a due date. Students who are performing, must perform for their team and have their team sign their choice board square.

Lesson Segment 3: Summary

In their journals, have student write as if they were explaining to a fourth grader how to set up and solve a proportion. Give them the Written Response Evaluation rubric

Assign any additional practice from text as needed.

Assessment Plan

Performance, journal

Bibliography

This lesson plan was created by Linda Bolin.

Authors

[Utah LessonPlans](#)