

Maps

Overview:

This lesson will focus on using proportions and scale factor to find the mileage on a map.

Benchmarks:

Grades 5-7

D. Use models and pictures to relate concepts of ratio, proportion and percent.

I. Use a variety of strategies including proportional reasoning, to estimate, compute, solve and explain solutions to problems involving integers, fractions, decimals, and percents.

J. Apply properties of equality and proportionality to solve problems involving congruent or similar figures

Grades 8-10

G. Estimate, compute, and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions.

D. Use proportional reasoning and apply indirect measurement techniques to solve problems involving measurement and rates.

Materials:

Students will need the following: an Ohio map, ruler, and worksheet

Time:

45 minutes

Procedures:

1. The students will be working in groups of two. Give each group an Ohio map. Have the students find the scale factor in the key of the map. Write the fraction on the board.
2. Pass out the worksheets and the rulers. Have the students measure from Lancaster to Columbus using inches.
3. On the board, help the students set up the proportion and solve it.
4. Show the students how to fill in the worksheet.
5. Have the students measure from Toledo to Columbus using the ruler.
6. Set up the proportion and solve on the board.
7. Allow the students to finish on their own.

Extension:

Give each group a map from another state and have them create problems for another group to solve. Trade maps and questions and allow the students to find the new scale factor and solve the proportions.

Scale Factor

Directions	Proportion	Miles
1. From Lancaster to Columbus		
2. From Toledo to Columbus		
3. From Chillicothe to Columbus		
4. From Cincinnati to Columbus		
5. From Mansfield to Columbus		
6. From Wellston to Columbus		
7. From Findlay to Columbus		
8. From Springfield to Athens		
9. From Zanesville to Akron		
10. From Athens to Findlay		
11. From Sidney to Mt. Vernon		
12. From Chillicothe to Cleveland		
13. From Washington Court House to Ironton		
14. From Cincinnati to Circleville		
15. From Marion to Mansfield		