

Designer Name(s):

Date: 2nd quarter

Subject Area: math

Grade Level(s): 7th

Unit Title/Focus: planning a vacation/proportional reasoning

Estimated Amount of Instructional Time: quarter 2

Stage 1 – (Desired Results)

State Content and Skill Standards:

7.RP.A, 7.RP.1, 7.RP.2, 7.RP.3

Enduring Understandings: (what are the big ideas, what are the specific understandings desired)

Students will understand that,
Students will analyze proportional relationships and use them to solve real-world mathematical problems

Essential Questions: (what questions will foster inquiry, understanding, and transfer of learning)

What is a proportion?
How can understanding proportions be used to solve problems involving distance and time?
How can proportions be used to solve problems involving the cost of vacation activities?
How can proportional thinking be used in reading maps?
How can proportional thinking be used to find sales tax, gratuities, percent problems with markdowns, markups

Big Idea(s)

Proportional reasoning can be used to solve problems with distance, unit rate, unit price and map scale

What Students will know: (what knowledge will they acquire)

The students will identify proportional relationships presented in graphical, tabular, or verbal formats
The students will understand proportions.
The students will explain and use unit rates.

Students should be able to find whole number proportionality constants in relationships presented in graphical, tabular, or verbal formats

Students will analyze a graph of a proportional relationship in order to explain what the points, (x,y) and $(1,r)$ where r is the unit rate, and use this information to solve problems

What Students will be able to do: (what will they eventually be able to do as a result of their skills learned/knowledge)

Students will use map scales to find distance
Students will identify the constant of proportionality (unit rates)
Students will use unit rates to find drive time
Students will use unit rate to find total cost for gas
Students will use equations to solve proportional relationship. ($t=pn$; t =total, p =price, n =number of items) to find the cost of vacation activities such as scuba lessons
Students will budget food expenses in restaurant including the tax and gratuities
The student will compute with percentages

Stage 2 - Assessment Evidence (acceptable assessment evidence that students understand)	
<p><i>Performance Tasks: (what authentic performance task (s) will students demonstrate understanding; by what criteria will it be judged)</i></p> <p>The students will find the cost of gas for a cross country trip The students will establish a food budget for a cross country vacation. The students will calculation vacation activities costs The students will find the drive time using mileage</p>	<p><i>Other Evidence: (quizzes, tasks, academic prompts, homework, observations)</i></p> <p>Performance test</p>
Stage 3 - Learning Plan (sequence of teaching and learning activities that will produce desired understandings, engagement and development) Use WHERETO elements to help you:	
<p><i>Learning Activities:</i></p> <p>Hook students into understanding that proportional reasoning can be used in planning vacations Equip students to use unit rates to find mileage, cost of gas, and cost of vacation activities. Provide opportunities to budget food expenses using percent</p> <p>The students will plan a cross country trip from Mountain Home Idaho to Williamsburg Virginia. The students will use proportional reasoning to find the cost of gas, the drive time, the cost of vacation activities such as bike rental or scuba lessons. The students will budget food expenses including tax and gratuities.</p> <p>Resources: Saxon Math Lessons; 39,46,53,55,60, 72,92,98; Investigations 9 and 11; Standard Success; Standards Focus Activity: 13,19, 23,25, 26</p>	

W=help the students know WHERE the unit is going and WHAT is expected/Help teacher to know where the students are coming from (prior knowledge, interests)

H=HOOK all students and hold their interest

E=EQUIP students, help them EXPERIENCE the key ideas and EXPLORE the issue

R=Provide opportunities to RETHINK and REVISE their understanding/work

E (2)=Allow students to EVALUATE their work

T=Be TAILORED (personalized) to different needs, interests, and abilities of learners

O=Be ORGANIZED to maximize initial and sustained engagement as well as effective learning

Assessment Tasks that Provide Evidence for Claims including DOK	<input type="checkbox"/> Claim #1/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #2/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #3/DOK 1, 2, 3, 4 (circle one):
	<input type="checkbox"/> Claim #4/DOK 1, 2, 3, 4 (circle one):
Achievement Level Descriptors	ALD #1: ALD #2: ALD #3: ALD #4: (circle one):
Materials/Resources	Saxon Math, Saxon Standards Success, Units by Design