Richmond Public Schools
Department of Curriculum and Instruction
Curriculum Pacing And Resource Guide – Unit Plan

Course Title/ Course #: Pre-Algebra Math 8

Unit Title/ Marking Period # (MP): Proportional Reasoning/Percent of Change

Start day: 47

Meetings (Length of Unit): 15 days

Desired Results ~ What will students be learning?
Standards of Learning/ Standards
8.3 The student will a) solve practical problems involving rational numbers, percents, ratios, and proportions; and b) determine the percent increase or decrease for a given situation.
Essential Understandings/ Big Ideas
What is the difference between percent increase and percent decrease? They are both percents of change measuring the percent a quantity increases or decreases. Percent increase shows a growing change in a quantity while percent decrease shows a lessening change. What is a percent? A percent is a special ratio with a denominator of 100.
Key Essential Skills and Knowledge
- Write a proportion given the relationship of equality between two ratios.   - Solve practical problems by using computation procedures for whole numbers, integers, fractions, percents, ratios and proportions. Some problems may require the application of a formula.   - Maintain a checkbook and check registry for five or fewer transactions.   - Compute a discount or markup and the resulting sale price for one discount or markup.   - Compute the percent increase or decrease for a one step equation found in a real life situation.

- Compute the sales tax or tip and resulting total.
- Substitute values for variables in a given formulas. For example, use the simple interest formula to determine the value of any missing variable when given specific information.
- Compute the simple interest and new balance earned in an investment or on a loan for a given number of years.

Vocabulary

Ratio	Rate	
Discount	Percent of Change	
Sale price	Percent Increase	
Mark up	Percent Decrease	
Tip	Investment	
Tax	Loan	
Simple Interest	Checkbook	
Principle		
Proportion		
Scale drawing		
Scale		

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Mulligan Checkpoint 8.3
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Interactive Achievement
HCPS Mini Quizzes
Students should be able to apply proportional reasoning to practical problems.
They should be able to calculate the percent increase or decrease.
Students should be able to calculate the interest on a loan or investment.
Students should be able to find the percent of a number given a real life situation.

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Activity:
- Use two colored counters to model fractions as ratios 2/3. So 2 yellow to 3 red. Then, create equivalent fractions to review proportionality. So you would then create 4/6. 4 yellow and 6 red. Ask the students if they see 2/3 in it?

- Create a foldable about proportions, including strategies to help them solve word problems. Allow the students to use proportions and pictures to solve. Having students solve problems using pictures and non-traditional algorithms will help them understand, and have various methods, for solving proportional reasoning problems.
- Use real life scenarios to determine if two relationships are proportional. You can use problems in the text book, just add real life contexts to the numbers. Have students determine if the two relationships are equal. Have them draw a picture to prove their answers.
- As a review/wrap up with tip, tax, discount, and checking account. Have students complete The checks and balances review activity from the Henrico County website.
- Reference the "other sites" section to find other instructional materials.

Activity:
- For scale drawing: have students create a scale drawing of object that are easily measured on their desk. You can have students create their own scale or give the students the scale.

Technology Integrations

Gizmo
Educational Games-under resources
Compass Learning
Allen Teachers
Brain Pop
Khan Academy

Resources

Text
Glencoe Pre-Algebra pages:
267-271 (Ratios)
272-276 (Unit Rate)
291-296 (Solving Proportions)
298-303 (Scale Drawings and Models)
305-310 (Similar Figures)
347-348 (Using a Percent Model)
349-354 (Using the Percent Proportion)
368-373 (Percent of Change)
374-378 (Simple and Compound Interest)

Mulligan Math in Minutes 8.3
SOL Coach Book Va Edition: pages 38-44

Technology
Gizmo-Beam to Moon-Interactive Instructional Resource
Gizmo-Percent of Change-Interactive Instructional Resource
Gizmo-Percent Proportion-Interactive Instructional Resource
Compass Learning-https://www.thelearningodyssey.com - M7049, M7051, M7061, M7064, M7067, M7073, 76256, 76258, M8055, M8075, M8139, M8049, M8052, 8075
Allen Teachers-Interest -TEI Practice
Allen Teachers-Percent of Change-TEI practice

Virginia Department of Education
VDOE-Do You Like to Spend Money?-Lesson Plan
VDOE-The Scoop on Ice cream-Lesson Plan
VDOE-Percent of Increase or Decrease-Lesson Plan
Algebra Readiness-Ratio's-Lesson Plan

Other Sites
HCP-SOL 8.3 Resources- Instructional materials, practice page, assessments
Illuminations-Now and Then-Lesson Plan
Illuminations-Who Lost More?-Lesson Plan
Illuminations-Off the Scale-Lesson Plan
Illuminations-Creating a Two Dimensional Blueprint-Lesson Plan
Illuminations-Shops at the Mall-Lesson Plan
Inside Mathematics Candies-Performance Task
Inside Mathematics Snail Pace-Performance Task
Inside Mathematics Truffles-Performance Task

Cross Curricular Connection

Science (cooking)-Use VDOE ice-cream activity.
History-Calculate the percent of change for populations overtime due to historic History events.