Richmond Public Schools

Curriculum Framework

Grade 7 Honors (7/8)

Strand: Measurement and Geometry	
8.4 The student will solve practical problems involving consumer applications. **7.2 The student will solve practical problems involving operations with rational numbers.**	
Suggested Pacing	
Related Standards	
Spiral Down: 5th Grade: ● SOL 5.4 6th Grade: ● SOL 6.5b,c	Spiral Up:
Essential Questions	**Common Misconceptions**
● How can fractions, decimals, and percents be used to solve real-life problems? ● How do I know where to begin when solving a problem? ● How do I know when/if my result is reasonable? ● How do I decide which strategy(ies) will work best in a given problem?	● Problem Solving: students are unsure of where to start, what approach to use, and knowing when they're done (if they're answer is reasonable); students, with reading deficiencies, will struggle with understanding the math that is embedded within the words of the problem
Understanding the Standard	**Essential Knowledge and Skills**
SOL 8.4: ● Rational numbers may be expressed as whole numbers, integers, fractions, percents, and numbers written in scientific notation. ● Practical problems may include, but are not limited to, those related to economics, sports, science, social science, transportation, and health. Some examples include problems involving the amount of a pay check	SOL 8.4: ● Solve practical problems involving consumer applications by using proportional reasoning and computation procedures for rational numbers. ● Reconcile an account balance given a statement with five or fewer transactions.

per month, commissions, fees, the discount price on a product, temperature, simple interest, sales tax and installment buying.

- A percent is a ratio with a denominator of 100.
- Reconciling an account is a process used to verify that two sets of records (usually the balances of two accounts) are in agreement. Reconciliation is used to ensure that the balance of an account matches the actual amount of money deposited and/or withdrawn from the account.
- A discount is a percent of the original price. The discount price is the original price minus the discount.
- Simple interest (I) for a number of years is determined by finding the product of the principal (p), the annual rate of interest (r), and the number of years (t) of the loan or investment using the formula $I = prt$.
- The total value of an investment is equal to the sum of the original investment and the interest earned.
- The total cost of a loan is equal to the sum of the original cost and the interest paid.
- Percent increase and percent decrease are both percents of change measuring the percent a quantity increases or decreases.

SOL 7.2:

- The set of rational numbers includes the set of all numbers that can be expressed as fractions in the form $\frac{a}{b}$ where a and b are integers and b does not equal zero. The decimal form of a rational number can be expressed as a terminating or repeating decimal. A few examples of rational numbers are: $\sqrt{25}$, $\frac{1}{4}$, -2.3, 82, 75%, $4.\overline{59}$.
- Proper fractions, improper fractions, and mixed numbers are terms often used to describe fractions. A proper fraction is a fraction whose numerator is less than the denominator. An improper fraction is a fraction whose numerator is equal to or greater than the denominator. An improper fraction may be expressed as a mixed number. A mixed number is written with two parts: a whole number and a proper fraction (e.g., $3\frac{5}{8}$). A fraction can have a positive or negative value.

- Compute a discount or markup and the resulting sale price for one discount or markup.
- Compute the sales tax or tip and resulting total.
- Compute the simple interest and new balance earned in an investment or on a loan given the principal amount, interest rate, and time period in years.

SOL 7.2:

- Solve practical problems involving addition, subtraction, multiplication, and division with rational numbers expressed as integers, fractions (proper or improper), mixed numbers, decimals, and percents. Fractions may be positive or negative. Decimals may be positive or negative and are limited to the thousandths place.

- Solving problems in the context of practical situations enhances interconnectedness and proficiency with estimation strategies. Practical problems involving rational numbers in grade seven provide students the opportunity to use problem solving to apply computation skills involving positive and negative rational numbers expressed as integers, fractions, and decimals, along with the use of percents within practical situations.

Vocabulary

SOL 8.4:

Percents	Ratio	Deposit
Withdraw	Discount	Markup
Sale Price	Tax	Tip
Discount	Simple Interest	Percent Increase
Percent Decrease	Principal Amount	Balance
Transaction		

SOL 7.2:

Fraction	Decimal	Percent
Mixed Number	Proper Fraction	Improper Fraction

Assessment

Instructional Activities Organized by Learning Objective

Textbook

Notes

Resources
- Print
- Technology-based

Station Activities

Cross-Curricular Connections

Tiered Differentiations