Grade 8 Math Intervention

Content Area: **Mathematics**
Course(s):
Time Period: **Trimester 1**
Length: **5 months**
Status: **Published**

Summary

Students learn to analyze and apply proportional relationships, extend their understanding of operations to all rational numbers, and manipulate algebraic expressions. They also solve multi-step real-life and mathematical problems using numerical and algebraic expressions and equations. These standards build essential skills in ratios, rational numbers, and algebra, focusing on both conceptual understanding and practical application. By mastering these concepts, students develop critical thinking and problem-solving skills. They are also prepared for more advanced mathematical studies. Overall, these standards aim to ensure students are proficient in key mathematical concepts and can apply them in various contexts.

Written: June 2024

Essential Questions

- How can properties of operations help us to simplify and manipulate algebraic expressions?
- How can rational numbers be applied to solve real-world problems?
- How can we apply different properties to factor and expand linear expressions?
- How can we extend our understanding of operations to include all rational numbers?
- How can we use proportional relationships to solve real-world problems?
- How can we use variables to represent quantities in real-world and mathematical problems?
- How do algebraic expressions and equations help us solve real-life problems?
- How do we determine when two quantities are proportional?
- In what ways can we represent and interpret unit rates and proportional relationships using equations and graphs?
- What is the importance of understanding and creating equivalent expressions in algebra?
- What methods can we use to solve multi-step equations and inequalities effectively?
- What strategies can we use to perform arithmetic operations with integers, fractions, and decimals?

Enduring Understandings

- Algebraic expressions and equations are versatile tools for modeling and solving a wide range of real-life problems effectively.

- Applying rational numbers to real-world scenarios enhances practical mathematical skills and decision-making abilities.
- Creating and understanding equivalent expressions is critical for solving algebraic problems and understanding mathematical relationships.
- Extending operations to all rational numbers, including negatives, is fundamental for advanced mathematical concepts and real-life applications.
- Factoring and expanding linear expressions using properties of operations lays the groundwork for more complex algebraic manipulations.
- Mastery of arithmetic operations with integers, fractions, and decimals is necessary for effective problem-solving in diverse situations.
- Solving multi-step equations and inequalities is a fundamental skill for tackling complex problems systematically.
- The properties of operations are essential tools for simplifying and manipulating algebraic expressions.
- Variables are powerful tools for representing and solving real-world and mathematical problems involving unknown quantities.

Students Will Know

- How to apply different properties to factor and expand linear expressions.
- How to apply rational numbers to solve real-world problems.
- How to determine when two quantities are proportional.
- How to extend their understanding of operations to include all rational numbers.
- How to represent and interpret unit rates and proportional relationships using equations and graphs.
- How to use algebraic expressions and equations to solve real-life problems.
- How to use properties of operations to simplify and manipulate algebraic expressions.
- How to use proportional relationships to solve real-world problems.
- How to use variables to represent quantities in real-world and mathematical problems.
- Methods for solving multi-step equations and inequalities effectively.
- Strategies for performing arithmetic operations with integers, fractions, and decimals.
- The importance of understanding and creating equivalent expressions in algebra.

Students Will Be Skilled At

- Applying proportional relationships to solve a variety of real-world problems accurately and efficiently.
- Creating and understanding equivalent expressions to solve algebraic problems efficiently and effectively.
- Integrating operations with all rational numbers, including negatives, to solve mathematical and real-world problems effectively.
- Performing arithmetic operations with integers, fractions, and decimals fluently and accurately.
- Representing and interpreting unit rates and proportional relationships using multiple methods, including equations and graphs.
- Simplifying and manipulating algebraic expressions using properties of operations with precision and confidence.

- Using variables to represent and solve real-world and mathematical problems systematically and accurately.

Standards

When addressing equality in the context of real world situations, the following is being addressed:

In accordance with New Jersey's Chapter 32 Diversity and Inclusion Law, this unit includes instructional materials that highlight and promote diversity, including:

economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and ethnicity, disabilities, and religious tolerance.

MATH.7.RP.A	Analyze proportional relationships and use them to solve real-world and mathematical problems
MATH.7.RP.A.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
MATH.7.RP.A.2	Recognize and represent proportional relationships between quantities.
MATH.7.RP.A.2.a	Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
MATH.7.RP.A.2.b	Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
MATH.7.RP.A.2.c	Represent proportional relationships by equations.
MATH.7.RP.A.2.d	Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
ELA.L.KL.6.2.B	Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
MATH.7.NS.A	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers
MATH.7.NS.A.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
MATH.7.NS.A.1.a	Describe situations in which opposite quantities combine to make 0.
MATH.7.NS.A.1.b	Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
MATH.7.NS.A.1.c	Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
MATH.7.NS.A.1.d	Apply properties of operations as strategies to add and subtract rational numbers.

MATH.7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
MATH.7.NS.A.2.a	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
MATH.7.NS.A.2.b	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts.
MATH.7.NS.A.2.c	Apply properties of operations as strategies to multiply and divide rational numbers.
MATH.7.NS.A.2.d	Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
MATH.7.NS.A.3	Solve real-world and mathematical problems involving the four operations with rational numbers.
MATH.7.EE.A	Use properties of operations to generate equivalent expressions
MATH.7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
MATH.7.EE.A.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
MATH.7.EE.B.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
MATH.7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
MATH.7.EE.B.4.a	Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms with accuracy and efficiency. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.
MATH.7.EE.B.4.b	Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.
	Constructing Explanations and Designing Solutions
	Developing and implementing an action plan is an essential step for achieving one's personal and professional goals.

Learning Plan

Unit 1

Week 1; Day 1 & 2 Understanding Integers, Opposites, & Absolute Value

Day 1; Representing Integers

Lesson

Open Up

- Positive and Negative Numbers
- Using Negative Numbers to Make Sense of Contexts

Illustrative Mathematics

- It's warmer in Miami
- Mile High

IXL

- 1. Understanding integers 8EP

Day 2; Opposites & Absolute Value

Lesson

iReady

- Opposite Challenge

Illustrative Mathematics

- Bank Account
- Comparing Freezing Points
- Distances Between Houses

Hand 2 Mind

- Gr. 7 Mini-Lesson - Combine Quantities to Make Zero (pgs. 24-25) & Student Sheet (pg. 108)

IXL

- 1. Understanding opposite integers X8L

- 2. Opposites of rational numbers E8R
- 3. Rational numbers: find the sign V2E

Week 2; Day 1 & 2 Adding Integers

Day 1 & 2; Adding Integers

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Changing Temperatures
- Changing Elevation

iReady

- Adding Integers Go Fish! (Answer Key)

Hand 2 Mind

- Gr. 7 Mini-Lesson - Add Integers (pgs. 26-27) & Student Sheet (pg. 109)
- Gr. 7 Mini-Lesson - Solve Addition Problems with Integers (pgs. 28-29) & Student Sheet (pg. 110)

IXL

- 1. Add integers using number lines A63
- 2. Integer addition rules ERH
- 3. Integer addition and subtraction rules 6EV
- 4. Apply addition and subtraction rules Y8T
- 4. Add integers QFU
- Model with counters

1. Add integers using counters FTM

Week 3; Day 1 & 2 Subtracting Integers

Day 1 & 2; Subtracting Integers

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Representing Subtraction

iReady

- Match Two Expressions: Subtracting Integers (Answer Key)
- Ocean Addition & Subtraction (Answer Key)

Illustrative Mathematics

- Differences and Distances

Hand 2 Mind

- Gr. 7 Mini-Lesson - Subtract Integers (pgs. 30-31) & Student Sheet (pg. 111)
- Gr. 7 Mini-Lesson - Solve Subtraction Problems with Integers (pgs. 32-33) & Student Sheet (pg. 112)
- Gr. 7 Mini-Lesson - Add and Subtract Integers (pgs. 34-35) & Student Sheet (pg. 113)

IXL

- 1. Subtract integers using number lines FGG
- 2. Integer subtraction rules QZA
- 3. Integer addition and subtraction rules 6EV
- 4. Apply addition and subtraction rules Y8T
- 5. Subtract integers HEU
- 6. Add and subtract integers FNS

- Model with counters

1. Add integers using counters FTM
2. Subtract integers using counters BGL
3. Add and subtract integers using counters B8X

Week 4; Day 1 & 2 Adding and Subtracting Decimals

Day 1 & 2; Adding and Subtracting Decimals

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

iReady

- Mixing Chemicals: Addition with Negative Numbers (Answer Key)

IXL

- Positive rational numbers

7. Add and subtract decimals BP2

8. Add, subtract, multiply, or divide two decimals 5ZF

Week 5; Day 1 & 2 Adding and Subtracting Fractions

Day 1 & 2; Adding and Subtracting Fractions

Lesson

- Addition
- Subtraction

Maneuvering the Middle

- Task Cards
  - Addition
  - Subtraction
- Digital Activity
  - Addition
  - Subtraction

Open Up

- Subtracting Rational Numbers

IXL

- Positive Rational Numbers

9. Add and subtract fractions NGL

10. Add and subtract mixed numbers 9BE

12. Add and subtract positive and negative fractions SD2

13. Add and subtract rational numbers GKU

Week 6; Day 1 & 2 Multiply & Divide Integers

Day 1 & 2; Multiply & Divide Integers

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Position, Speed, and Direction

iReady

- Around the Square: Multiplication with Integers (Answer Key)
- First Five Equations: Multiplication & Division

Illustrative Mathematics

- Drill Rig
- Why is a Negative Times a Negative Always a Positive?

Hand 2 Mind

- Gr. 7 Mini-Lesson - Multiply Integers (pgs. 36-37) & Student Sheet (pgs. 114-115)
- Gr. 7 Mini-Lesson - Divide Integers (pgs. 38-39) & Student Sheet (pg. 116)
- Gr. 7 Mini-Lesson - Multiply and Divide Integers (pgs. 40-41) & Student Sheet (pg. 117)

IXL

- 1. Multiply integers DQT
- 2. Divide integers CTV
- 3. Multiply and divide integers R8D
- 1. Understand multiplying by a negative integer using a number line NB8
- 2. Integer multiplication rules K7U

- 3. Integer multiplication and division rules 5R8
- 4. Apply multiplication and division rules V5V
- 1. Integer division rules T9Q
- 2. Equal quotients of integers 2QY

Week 7; Day 1 & 2 Multiply & Divide Decimals

Day 1; Multiply Decimals

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

IXL

- Positive decimals

4. Multiply decimals TCU

Day 2; Divide Decimals

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

IXL

- Positive Decimals

5. Divide decimals 6HB

- Rational numbers

11. Multiply and divide positive and negative decimals
K7V

Week 8; Day 1 & 2 Multiply & Divide Fractions

Day 1; Multiply Fractions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Multiply!

iReady

- Recipe Scramble (Answer Key)

IXL

- Positive fractions

6. Multiply fractions PDK

7. Multiply mixed numbers JNY

10. Multiply fractions and whole numbers ZNQ

Day 2; Divide Fractions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Dividing Rational Numbers

Illustrative Mathematics

- Temperature Change

IXL

- Positive fractions

8. Divide fractions X7A

9. Divide mixed numbers UPF

- Rational Numbers

12. Multiply and divide positive and negative fractions 2B5

13. Multiply and divide rational numbers BXW

Week 9; Day 1 & 2 Converting Fractions to Decimals

Day 1 & 2; Converting Fractions to Decimals

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Illustrative Mathematics

- Decimal Expansions of Fractions
- Equivalent fractions approach to non-repeating decimals
- Repeating decimal as approximation
- Repeating or Terminating?

Hand 2 Mind

- Gr. 7 Mini-Lesson - Convert Rational Numbers to Decimals (pgs. 42-43) & Student Sheet (pg. 118)

IXL

- 1. Convert fractions or mixed numbers to decimals M2D
- 2. Classify rational numbers LCS

Week 10; Day 1 & 2 Real World Problems with Rational Numbers

Day 1; Add & Subtract

Lesson

Open Up

- Adding and Subtracting to Solve Problems
- Multiplying Rational Numbers
- Negative Rates
- Expressions with Rational Numbers

IXL

- Addition and subtraction

1. Complete addition and subtraction equations with integers P6A

2. Add and subtract integers: word problems 2DD

3. Add and subtract decimals: word problems RKZ

4. Add and subtract fractions: word problems ENL

5. Add and subtract mixed numbers: word problems 6YT

Day 2; Multiply & Divide

Lesson

Illustrative Mathematics

- Sharing Prize Money

IXL

- Multiplication and division

6. Complete multiplication and division equations with integers K94

7. Multiply decimals and whole numbers: word problems VZN

8. Divide decimals by whole numbers: word problems TUU

9. Multiply fractions and mixed numbers: word problems 5NJ

10. Divide fractions and mixed numbers: word problems 5VR

- Mixed operations

11. Add, subtract, multiply, and divide integers B8A

12. Add, subtract, multiply, and divide decimals: word problems TGN

13. Add, subtract, multiply, and divide fractions and mixed numbers: word problems KR7

14. Add, subtract, multiply, and divide money amounts: word problems HGN

15. Price lists CVW

Unit 2

Week 1; Day 1 & 2 Distributive Property, Combining Like Terms, Factoring

Day 1; Distributive Property & Combining Like Terms with Integers

Lesson

Open Up

- Different Options for Solving One Equation
- Combining Like Terms (Part 1)
- Combining Like Terms (Part 2)
- Combining Like Terms (Part 3)

Hand2Mind

- Gr. 7 Mini-Lesson - Expand Expressions (Pgs. 46-47) & Student Sheet (Pg. 120)

IXL

- Properties of operations

1. Multiply using the distributive property: area models J8K

2. Multiply using the distributive property NUY

3. Write equivalent expressions using properties 6XR

- Add and subtract

4. Simplify expressions by combining like terms JJG

5. Add and subtract linear expressions 6BT

Day 2; Factoring

Lesson

Open Up

- Subtraction in Equivalent Expressions
- Expanding and Factoring

Hand2Mind

- Gr. 7 Mini Lesson - Write Equivalent Expressions (Pgs. 48-49) & Student Sheet (Pg. 121)

IXL

- Factor

6. Factor linear expressions: area models QRL

7. Factors of linear expressions J9G

- Identify linear expressions

8. Identify equivalent linear expressions using algebra tiles 38V

9. Identify equivalent linear expressions I DRB

10. Identify equivalent linear expressions II KAR

Week 2; Day 1 & 2 Order of Operations

Day 1; Order of operations with integers

Lesson

iReady

- Use the Order of Operations to Write and Evaluate Expressions with Parentheses

IXL

- 1. Evaluate numerical expressions involving integers 7YN
- 4. Evaluate numerical expressions involving exponents D7P

Day 2; Order of Operations with Decimals & Fractions

Lesson

IXL

- 2. Evaluate numerical expressions involving decimals FNM
- 3. Evaluate numerical expressions involving fractions XXQ

Week 3; Day 1 & 2 Evaluating Expressions

Day 1 & 2; Writing & Solving Expressions

Lesson

Open Up

- Applications of Expressions

iReady

- Write Equivalent Linear Expressions
- Evaluate Variable Expressions
- Write Equivalent Expressions
- Find Your Way Out (Answer Key)
- Match the Expression (Answer Key)
- Situation Match-Up (Answer Key)

Illustrative Mathematics

- Ticket to Ride
- Writing Expressions
- Miles to Kilometers
- Equivalent Expressions?
- Shrinking

IXL

- Evaluate variable expressions

5. Evaluate linear expressions UG6

6. Evaluate multi-variable expressions T56

7. Evaluate nonlinear expressions ZHY

- Real-life problems

8. Maps with decimal distances WT7

9. Maps with fractional distances KXP

10. Multi-step word problems with positive rational

numbers JVU

- 1. Identify equivalent linear expressions: word problems KWH

Week 4; Day 1 & 2 Writing & Solving Equations

Day 1; Writing & Solving One-Step Equations

Lesson (Solving) (NJCTL)

Lesson (Writing)

Maneuvering the Middle

- Task Cards (Solving)
- Digital Activity (Solving)
- Task Cards (Writing)
- Digital Activity (Writing)

Open Up

- Dealing with Negative Numbers

iReady

- Solve Equations

Day 2; Writing & Solve Two-Step Equations

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Reasoning About Contexts with Tape Diagrams (Part 1)
- Reasoning About Contexts with Tape Diagrams (Part 2)
- Reasoning about Solving Equations (Part 1)
- Reasoning about Solving Equations (Part 2)
- Using Equations to Solve Problems

iReady

- Understand Multi-Step Equations
- Write Equations to Solve Problems
- Model and Solve One-Variable Equations
- Test Solutions of Equations
- Use Vocabulary for Solving One-Variable Equations (Answer Key)
- Write and Solve Multi-Step Equations

Hand2Mind

- Gr. 7 Mini Lesson - Write and Solve Linear Equations (Pgs. 54-55) & Student Sheet (Pg. 124)

IXL

- Solve equations

1. Model and solve equations using algebra tiles EGK
2. Solve two-step equations without parentheses CMX
3. Solve two-step equations with parentheses NSH
4. Solve two-step equations QEB
5. Solve equations involving like terms VSW
6. Solve equations: complete the solution 66R

Week 5; Day 1 & 2 Solving Two-Step Equations

Day 1; Solving Two-Step Equations

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Reasoning about Equations and Tape Diagrams (Part 1)
- Reasoning about Equations and Tape Diagrams (Part 2)

iReady

- Equation Mazes (Answer Key)

Day 2; Solving Two-Step Equation Word Problems

Lesson

Open Up

- Relationships between Quantities
- Distinguishing Between Two Types of Situations
- Solving Problems about Percent Increase or Decrease

iReady

- Solve Problems with Rational Numbers
- Write and Solve Algebraic Equations (Answer Key)
- Write Equations to Solve Problems
- What's the Temp? (Answer Key)

Illustrative Mathematics

- Gotham City Taxis
- Discounted Books

IXL

- Word problems

7. Choose two-step equations: word problems 8NH

8. Solve two-step equations: word problems D2Y

Week 6; Day 1 & 2 Solving One-Step Inequalities

Day 1; Solving One-Step Inequalities

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Reintroducing Inequalities

iReady

- Represent Inequalities on Number Lines

IXL

- One-step inequalities

1. Solve one-step inequalities QWH

2. Graph solutions to one-step inequalities TFK

3. One-step inequalities: word problems 6HD

Day 2; Solving Two-Step Inequalities

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Finding Solutions to Inequalities in Context
- Efficiently Solving Inequalities
- Interpreting Inequalities
- Modeling with Inequalities

iReady

- Write and Solve Inequalities
- Solve and Graph Linear Inequalities
- Inequality Bingo (Answer Key)
- What's in the Bag? (Answer Key)

Hand2Mind

- Gr. 7 Mini-Lesson - Write and Solve Inequalities (Pgs. 56-57) & Student Sheet (Pg. 125)

IXL

- Two-step inequalities

4. Solve two-step inequalities XGQ

5. Graph solutions to two-step inequalities 6TT

Unit 3

Week 1; Day 1 & 2 Unit Rates
Day 1; Unit Rate with Fractions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- One of These Things Is Not Like the Others

iReady

- Find Unit Rates involving Ratios of Fractions (Answer Key)
- Running Mates (Answer Key)

Illustrative Mathematics

- Track Practice
- Cooking with the Whole Cup
- Molly's Run (Assessment Variation)
- Cider Versus Juice:Variation 1 Variation 2
- How Fast is Usain Bolt?

Hand2Mind

- Gr. 7 Mini-Lesson: Determine Unit Rates (pgs. 8-9) & Student Sheet (pg. 100)

IXL

- 1. Calculate unit rates with fractions 57X
- 2. Unit prices N7G

Week 2; Day 1 & 2 Equivalent Ratios

Day 1; Equivalent Ratios

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 1)
- Digital Activity

iReady

- Understand Proportional Relationships (Answer Key)
- More Salsa Please (Answer Key)

Illustrative Mathematics

- Music Companies: Variation 1
- Art Class: Variation 1 Variation 2 Assessment Varation
- Sore Throats Variation 1

Hand2Mind

- Gr. 7 Mini-Lesson: Make Equivalent Ratios (pgs. 12-13) & Student Sheet (pgs. 102-103)

IXL

- Equivalent ratios

1. Identify equivalent ratios ZFM

2. Equivalent ratios: word problems DJ8

- Proportions

3. Do the ratios form a proportion? MJQ

4. Do the ratios form a proportion: word problems SHV

Day 2; Equivalent Ratios with Tables and Graphs

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 2 & 3)
- Digital Activity

Open Up

- Introducing Proportional Relationships with Tables

iReady

- Understand Rate Concepts (Answer Key)
- Use Unit Rates to Solve Problems (Answer Key)
- Proportion Tic Tac Toe (Answer Key)
- Represent Proportional Relationships (Answer Key)

Illustrative Mathematics

- Buying Coffee
- Robot Races (Assessment Variation)
- Buying Bananas Assessment Version

IXL

- Proportional relationships

5. Identify proportional relationships by graphing AAN

6. Identify proportional relationships from graphs and equations NB5

7. Identify proportional relationships from tables 6V7

Week 3; Day 1 & 2 Constant of Proportionality

Day 1; Constant of Proportionality from a Table

Lesson

Open Up

- More About Constant of Proportionality

iReady

- Proportional Relationships Go Fish (Answer Key)

IXL

- 1. Find the constant of proportionality from a table LKZ

Day 2; Constant of Proportionality from a Graph

Lesson

Open Up

- Introducing Graphs of Proportional Relationships
- Interpreting Graphs of Proportional Relationships
- Using Graphs to Compare Relationships

iReady

- Constant Graphing (Answer Key)

Illustrative Mathematics

- Walk-a-thon 2

Hand2Mind

- Gr. 7 Mini-Lesson: Determine the Constant of Proportionality (pgs 14-15) & Student Sheet (pg 1040

IXL

- 2. Find the constant of proportionality from a graph ZUT
- 1. Interpret graphs of proportional relationships RMH

Week 4; Day 1 & 2 Equations for Proportional Relationships

Day 1; Writing Equations for Proportional Relationships (Tables & Graphs)

Lesson

Open Up

- Proportional Relationships and Equations
- Two Equations for Each Relationship
- Comparing Relationships with Tables
- Comparing Relationships with Equations
- Two Graphs for Each Relationship

iReady

- Solve Proportional Relationship Problems (Answer Key)

Illustrative Mathematics

- Gym Membership Plans

Hand2Mind

- Gr. 7 Mini-Lesson: Graph and Write an Equation of Proportional Relationships (pgs 16-17) & Student Sheet (Pg 105)

IXL

- Represent relationships

1. Write equations for proportional relationships from tables 6GU

2. Write equations for proportional relationships from graphs JKH

Day 2; Writing and Solving Equations for Proportional Relationships (Word Problems)

Lesson

Open Up

- Using Equations to Solve Problems
- Solving Problems About Proportional Relationships

Illustrative Mathematics

- Proportionality
- Friends Meeting on Bikes
- Two-School Dance

IXL

- 3. Write and solve equations for proportional relationships VKK
- 4. Solve proportions: word problems WB7
- 5. Estimate population size using proportions 3C9

Week 5; Day 1 & 2 Percents

Day 1; Percent of a Number

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Illustrative Mathematics

- Selling Computers

IXL

- Solve proportional problems
- 6. Percents of numbers and money amounts 93K
- 7. Percents of numbers: word problems EXE

Day 2; Finding The Percent

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

IXL

- 8. Solve percent equations 67F
- 6. Solve percent equations: word problems JS6

Week 6; Day 1 & 2 Percents

Day 1; Percent of Change

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Illustrative Mathematics

- Comparing Years
- Chess Club
- Finding a 10% increase
- The Price of Bread

Hand2Mind

- Gr. 7 Mini-Lesson: Solve Percent Increase Problems (pgs. 18-19) & Student Sheet (pg. 106)
- Gr. 7 Mini-Lesson: Solve Percent Decrease Problems (pgs. 20-21) & Student Sheet (pg. 107)

IXL

- Percent of change

3. Percent of change BL7

4. Percent of change: word problems 54S

5. Percent of change: find the original amount word problems RCM

Day 2; Percent Error

Lesson

Illustrative Mathematics

- Measuring the area of a circle

IXL

- 7. Percent error: word problems 6UY

Week 7; Day 1 & 2 Discount & Tax

Day 1; Discount

Lesson

Illustrative Mathematics

- Double Discounts

IXL

- 9. Which is the better coupon? QT6

Day 2; Tax

Lesson

Open Up

- Kendall's Vase - Tax

Illustrative Mathematics

- Buying Protein Bars and Magazines

Week 8; Day 1 & 2 Tip & Sale Price

Day 1; Tip

Lesson

Illustrative Mathematics

- Tax and Tip
- Anna in D.C.

IXL

- 8. Percent of a number: tax, discount, and more SPN

Day 2; Sale Price

Lesson

Illustrative Mathematics

- Anna in D.C.

IXL

- 10. Find the percent: tax, discount, and more PBM
- 11. Sale prices: find the original price BDA
- 12. Multi-step problems with percents ZHX

Week 9; Day 1 & 2 Simple Interest

Day 1 & 2; Simple Interest

Lesson

Illustrative Mathematics

- Lincoln's math problem

IXL

- Simple interest

13. Simple interest E7Y

Evidence/Performance Tasks

Assessments

- Formative: NJSLA Test Bank Questions, IXL Skill Plan Questions, Task Cards, Exit Tickets
- Summative: Pre-Assessment, Post-Assessment
- Benchmark: IXL Diagnostic, iReady Diagnostic
- Alternative Assessments: Anticipatory Sets

Materials

Core instructional materials: Core Book List including Big Ideas Math textbook

Supplemental materials: IXL & iReady

Suggested Strategies for Modification

Suggested Strategies for Modifications for Middle School Math Intervention