Grade 7 Math Intervention

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

Summary

Students learn to understand and use ratios and proportional relationships to solve problems, including calculating unit rates and creating tables of equivalent ratios. They extend their number system knowledge by dividing fractions by fractions and fluently adding, subtracting, multiplying, and dividing multi-digit decimals. They also explore negative numbers, learning to locate them on a number line and understand absolute value. In expressions and equations, students write and evaluate algebraic expressions, generate equivalent expressions using properties of operations, and solve one-variable equations and inequalities. These skills build a strong foundation for advanced mathematical concepts in higher grades.

Written: June 2024

Essential Questions

- How can we use ratios to describe the relationship between two quantities, and how do we solve real-world problems using ratio reasoning?
- How do we accurately perform operations with multi-digit decimals, and why is this fluency important in everyday contexts?
- How do we create, evaluate, and simplify algebraic expressions, and how can we use equations and inequalities to model and solve real-world problems?
- What is the significance of negative numbers, and how do we represent and interpret them on a number line?
- What strategies can we use to divide fractions by fractions, and how do we apply these strategies in practical situations?

Enduring Understandings

- Create, evaluate, and simplify algebraic expressions, and use equations and inequalities to model and solve real-world problems.
- Develop fluency in performing operations with multi-digit decimals and understand the importance of these skills in everyday contexts.
- Strategies to divide fractions by fractions and apply these strategies in practical situations.
- Understand the significance of negative numbers and how to represent and interpret them on a number line.
- Use ratios to describe the relationship between two quantities and solve real-world problems using ratio reasoning.

Students Will Know

- How to create tables of equivalent ratios, find missing values, and use unit rates in problem-solving.
- How to locate positive and negative numbers on a number line and understand the concept of absolute value.
- How to use visual fraction models and equations to represent and solve fraction division problems.
- How to write and evaluate expressions, generate equivalent expressions using properties of operations, and solve one-variable equations and inequalities.
- The standard algorithms for adding, subtracting, multiplying, and dividing multi-digit decimals.

Students Will Be Skilled At

- Applying ratio reasoning to recognize and work with proportional relationships, using unit rates effectively to compare quantities and solve real-world problems.
- Describing and analyzing the relationship between quantities using ratios, identifying equivalent ratios, and solving problems based on these relationships.
- Dividing fractions by fractions and performing accurate operations with multi-digit decimals, applying various strategies fluently.
- Representing negative numbers on a number line, understanding their positions relative to zero, and interpreting absolute value accurately.
- Solving one-variable equations and inequalities, utilizing them to solve diverse problems across different contexts with confidence.
- Writing, evaluating, and simplifying algebraic expressions, effectively representing mathematical relationships and real-world scenarios.

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.

1	Make sense of problems and persevere in solving them
6.RP.A	Understand ratio concepts and use ratio reasoning to solve problems
2	Reason abstractly and quantitatively
6.RP.A.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6.RP.A.2	Understand the concept of a unit rate □/□ associated with a ratio □:□ with □ ≠ 0, and use rate language in the context of a ratio relationship.
4	Model with mathematics
	Developing and implementing an action plan is an essential step for achieving one's personal and professional goals.
6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
6.RP.A.3.a	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
6.RP.A.3.b	Solve unit rate problems including those involving unit pricing and constant speed.
L.KL.6.2.B	Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
6.RP.A.3.c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
6.RP.A.3.d	Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
6.NS.A	Apply and extend previous understandings of multiplication and division to divide fractions by fractions
6.NS.A.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
6.NS.C.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
6.NS.C.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
6.NS.C.6.a	Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.
6.NS.C.6.c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NS.C.7	Understand ordering and absolute value of rational numbers.
6.NS.C.7.a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
6.NS.C.7.b	Write, interpret, and explain statements of order for rational numbers in real-world contexts.
6.NS.C.7.c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
6.NS.C.7.d	Distinguish comparisons of absolute value from statements about order.
6.NS.C.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.EE	Expressions and Equations
6.EE.A	Apply and extend previous understandings of arithmetic to algebraic expressions
6.EE.A.1	Write and evaluate numerical expressions involving whole-number exponents.
6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers.
6.EE.A.2.a	Write expressions that record operations with numbers and with letters standing for numbers.
6.EE.A.2.b	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.
6.EE.A.2.c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).
6.EE.A.3	Apply the properties of operations to generate equivalent expressions.
6.EE.A.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).
6.EE.B.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.B.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form □ + □ = □ and □□ = □ for cases in which □, □ and □ are all nonnegative rational numbers.
6.EE.B.8	Write an inequality of the form □ > □ or □ < □ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form □ > □ or □ < □ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
6.EE.C.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
	Constructing Explanations and Designing Solutions

Learning Plan

Unit 1

Week 1; Day 1 & 2 Multiplication & Division of Fractions

Day 1; Multiplication of Fractions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Meanings of Division

Hand2Mind

- Gr. 5 Fraction Intervention Book - Multiply a Fraction by a Whole Number (pgs. 32-33) & Student Sheet (pg. 61)
- Gr. 5 Fraction Intervention Book - Use a Number Line to Multiply Fractions (pgs. 34-35) & Student Sheet (pg. 62)
- Gr. 5 Fraction Intervention Book - Use an Area Model to Multiply Fractions (pgs. 36-37) & Student Sheet (pg. 63)
- Gr. 5 Fraction Intervention Book - Use a Set Model to Multiply Fractions (pgs. 38-39) & Student Sheet (pg. 64)
- Gr. 5 Fraction Intervention Book - Multiply Mixed Numbers (pgs. 40-41) & Student Sheet (pg. 65)
- Gr. 5 Fraction Intervention Book - Solve Fraction Multiplication Word Problems (pgs. 42-43) & Student Sheet (pg. 66)
- Model and Multiply Fractions
- Multiply Fractions
- Multiply Fractions by Whole Numbers
- Multiply Fractions by Whole Numbers w. Circle Models
- Multiply Fractions by Whole Numbers Word Problems P.1
- Multiply Fractions Word Problems P.2

Day 2; Division of Fractions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Using Diagrams to Find the Number of Groups
- What Fraction of a Group?
- How Much in Each Group? (Part 1)
- How Much in Each Group? (Part 2)
- Interpreting Division Situations
- Using an Algorithm to Divide Fractions

iReady

- Divide Fractions
- Modeling Fractions (Answer Key)

Illustrative Mathematics

- Dividing by a Fraction is the Same as Multiplying by its Reciprocal

Hand2Mind

- Gr. 5 Fraction Intervention Book - Fractions as Division (pgs. 28-29) & Student Sheet (pg. 59)
- Gr. 5 Fraction Intervention Book - Whole Number Division with Fractional Answers (pgs. 30-31) & Student Sheet (pg. 60)
- Gr. 5 Fraction Intervention Book - Divide a Whole Number by a Unit Fraction (pgs. 44-45) & Student Sheet (pg. 67)
- Gr. 5 Fraction Intervention Book - Divide a Unit Fraction by a Whole Number (pgs. 46-47) &

Student Sheet (pg. 68)

- Gr. 5 Fraction Intervention Book - Solve Division Word Problems (pgs. 48-49) & Student Sheet (pg. 69)
- Divide a Whole Number by a Fraction Word Problem w. Number Line
- Divide a Whole Number by a Unit Fraction w. Models
- Division Word Problems w. Unit Fractions (using models)
- Model and Divide a Unit Fraction by a Whole Number
- Model and Divide a Whole Number by a Unit Fraction
- Representing Division (Word problems using models)
- Review Dividing a Unit Fraction by a Whole Number (Sentence frames)
- Review Dividing a Whole Number by a Fraction (Sentence Frames)
- Show Fractions as Division

IXL

- Divide fractions

1. Reciprocals 5BT

2. Divide whole numbers and fractions using models MF8

3. Divide fractions using models CHB

4. Divide fractions DS2

5. Divide fractions and mixed numbers using models DZT

6. Divide fractions and mixed numbers N2B

- Word problems

7. Divide fractions by whole numbers in recipes ENK

8. Divide fractions and mixed numbers using models: word problems YRT

9. Divide fractions and mixed numbers: word problems WAH

Week 2; Day 1 & 2 Understand Integers and their Opposites

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

Lesson

iReady

- Opposite Challenge

Hand2Mind

- 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 3; Day 1 & 2 Integers and Rational Numbers on a Number Line

Day 1 & 2; Integers & Rational Numbers on a Number Line

Lesson

Open Up

- Points on the Number Line
- Ordering Rational Numbers

Illustrative Mathematics

- Integers on the Number Line 2
- Fractions on the Number Line

IXL

- Number lines

1. Integers on number lines K6J

2. Graph integers on horizontal and vertical number lines 36C

3. Rational numbers on number lines DJE

Week 4; Day 1 & 2 Comparing Integers & Rational Numbers

Day 1; Comparing Integers

Lesson

iReady

- Read and Write Decimals to the Thousandths

Illustrative Math

- integers on the Number Line 1
- Comparing Temperatures

IXL

- 1. Compare integers 4G6
- 5. Compare temperatures above and below zero UVD

Day 2; Comparing Rational Numbers

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Comparing Positive and Negative Numbers

iReady

- Number Sense

IXL

- 1. Compare and order rational numbers using number lines FMS
- 2. Compare rational numbers KS2
- 3. Put rational numbers in order 5AX
- 4. Compare and order rational numbers: word problems ETK

Week 5; Day 1 & 2 Absolute Value of Integers and Rational Numbers

Day 1; Absolute Value

Lesson

Open Up

- Absolute Value of Numbers

Illustrative Mathematics

- Above and Below Sea Level
- Jumping Flea

IXL

- 1. Understanding absolute value TLR
- 2. Absolute value 2YZ
- 3. Absolute value and integers: word problems 9CW
- 4. Absolute value of rational numbers KGX

Day 2; Comparing Integers and Rational Number Absolute Value

Lesson

Open Up

- Comparing Numbers and Distance from Zero

iReady

- Absolute Value Puzzler

IXL

- 1. Integer inequalities with absolute values 4A8
- 2. Put rational numbers in order 5AX
- 3. Absolute value of rational numbers KGX

Week 6; Day 1 & 2 Graphing Points in all 4 Quadrants

Day 1; Graphing Points and Reflecting

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Points on the Coordinate Plane

iReady

- Quadrant Quest

Illustrative Mathematics

- Nome, Alaska
- Reflecting points over coordinate axes

IXL

- Coordinate plane
- 4. Objects on a coordinate plane GFN
- 5. Graph points on a coordinate plane VHQ

Day 2; Finding Distance Between Points

Lesson

Open Up

- Distances on a Coordinate Plane

Illustrative Mathematics

- Distance Between Points

IXL

- 1. Coordinate planes as maps N96
- 2. Distance between two points A7P
- 3. Follow directions on a coordinate plane XDQ

Unit 2

Week 1; Day 1 & 2 Exponents

Day 1; Writing Expressions Using Exponents

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Meaning of Exponents
- Expressions with Exponents

iReady

- Teaching Slides - Expressions with Exponents
- Teaching Slides - Write & Evaluate Expressions with Exponents
- Evaluate Expressions Using Exponents
- Evaluate Expressions with Exponents (Answers)
- Same Results (Answers)

Big Ideas

- Powers and Exponents
- Skills Review - Product of Powers Property (Answers)
- Skills Review - Exponents & Powers (Answers)

Illustrative Mathematics

- **The Djinni's Offer**
- **Seven to the What?!?**
- Exponent Experimentation 1

Hand2Mind

- Mini Lessons Book (grade 6) - Expressions and

Exponents (pgs. 52-53) & Student Sheet (pg. 126)

IXL

- Write expressions

1. Write multiplication expressions using exponents TY5

2. Write powers of ten with exponents DLL

- Evaluate expressions

3. Evaluate powers XDA

Day 2; Exponents with decimal and fraction bases

Lesson

iReady

- Fluency & Skills Practice (Answers)

Illustrative Mathematics

- **Sierpinski's Carpet**
- Exponent Experimentation 2
- Exponent Experimentation 3

Edia

- Exponents with Fraction and Decimal Bases

IXL

- 4. Find the missing exponent or base HC5
- 5. Powers with decimal bases D5D
- 6. Powers with fractional bases GEQ
- Powers with Decimal & Fractional Bases PFS

Week 2; Day 1 & 2 Writing Expressions

Day 1; Write expressions with one operation

Lesson

Open Up

- Write Expressions Where Letters Stand for Numbers

iReady

- Teaching Slides - Writing & Evaluating Expressions with Exponents

Big Ideas

- Skills Review - Writing Numerical Expressions (Answer Key)
- Resources by Chapter (Answer Key)

Hand2Mind

- Mini Lessons Book (grade 6) - Expressions with a Variable (pgs. 54-55) & Student Sheet (pg. 127)

IXL

- 1. Write variable expressions: one operation F5B

Day 2; Write expressions with 2 or more operations

Lesson

iReady

- Fluency & Skills Practice - Writing & Evaluating Expressions with Exponents (Teacher Lesson) & (Student Sheet)

Big Ideas

- Resources by Chapter (Answer Key)

Hand2Mind

- Mini Lessons Book (grade 5) - Numerical Expressions and Operational Words (pgs. 16-

17) & Student Sheet (pg. 105)

- Gr. 5 Number & Operations Intervention Book - Write Expressions (pgs. 10-11) & Student Sheet (pg. 53)

IXL

- 2. Write variable expressions: two operations CX9

Week 3; Day 1 & 2 Algebra Vocabulary

Day 1 & 2; Define and identify terms, coefficients, and factors of expressions

Lesson

iReady

- Teaching Slides - Algebraic Expressions
- Use Vocabulary for Algebraic Expressions (Answer Key)

Big Ideas

- Resources by Chapter (Answer Key)

Hand2Mind

- Mini Lessons Book (grade 6) - Variables and Constants (pgs. 56-57) & Student Sheet (pgs. 128-129)

IXL

- 1. Identify terms and coefficients 9KE
- 2. Sort factors of variable expressions QXS

Week 4; Day 1 & 2 Order of Operations

Day 1&2; Order of Operations

Lesson

Maneuvering the Middle

- Task Cards

- Digital Activity

iReady

- Teaching Slides - Using Order of Operations with Expressions with Exponents
- Fluency & Skills Practice - Using Order of Operations with Expressions with Exponents (Answer Key)
- Tools for Instruction - Evaluate Expressions using Exponents
- Tools for Instruction - Use Order of Operations to Write & Evaluate Expressions with Parentheses

Big Ideas

- Resources by Chapter
- Skills Review - Order of Operations (Answers)
- Skills Review - Order of Operations with Exponents (Answers)

Hand2Mind

- Mini Lessons Book (grade 5) - Order of Operations (pgs. 10-11) & Student Sheet (pg. 102)
- Mini Lessons Book (grade 5) - Evaluate Expressions to Add & Subtract (pgs. 12-13) & Student Sheet (pg. 103)
- Mini Lessons Book (grade 5) - Use Parentheses and Brackets (pgs. 15-14) & Student Sheet (pg. 104)
- Gr. 5 Number & Operations Intervention Book - Evaluate Expressions (pgs. 8-9) & Student Sheet (pg. 52)

IXL

- Order of operations

1. Evaluate numerical expressions one step at a time
XCQ

2. Evaluate numerical expressions involving whole

numbers MLU

3. Identify mistakes involving the order of operations
V46

4. Evaluate numerical expressions involving decimals
YEE

5. Evaluate numerical expressions involving fractions
WNE

Week 5; Day 1 & 2 Evaluate Variable Expressions

Day 1; Evaluate Multi-Variable Expressions

Lesson

Open Up

- Equivalent Exponential Expressions

iReady

- Tools for Instruction - Evaluate Variable Expressions
- Math Center - Evaluate Expressions with Exponents (Answer Key)

Big Ideas

- Resources by Chapter (Answer Key)

Illustrative Mathematics

- Rectangle Perimeter 1
- Distance to School

Hand2Mind

- Mini Lessons Book (grade 6) - Equations with a Variable (one variable) (pgs. 62-63) & Student Sheet (pg. 133)
- Mini Lessons Book (grade 6) - Addition & Subtraction Equations (one variable) (pgs. 64-65) & Student Sheet (pg. 134)
- Mini Lessons Book (grade 6) - Multiplication & Division (one variable) (pgs. 66-67) & Student Sheet (pg. 135)

IXL

- Evaluate variable expressions

6. Evaluate variable expressions with whole numbers Q8Z

7. Evaluate multi-variable expressions HC9

8. Evaluate variable expressions with decimals, fractions, and mixed numbers 49T

9. Evaluate variable expressions: word problems 7XA

Day 2; Evaluate Variable Expressions with Fractions & Decimals

Lesson

Open Up

- Equivalent Exponential Expressions

Big Ideas

- Skills Review - Evaluating Algebraic Expressions (Answer Key)

Worksheets in Google Drive

- Pages 8-11

Week 6; Day 1 & 2 Solve Expressions Involving Formulas

Day 1 & 2; Volume (V=s3), Surface Area (A=6s2), Density (d=M/V)

Lesson

Open Up

- Evaluating Expressions with Exponents

iReady

- Fluency & Skills Practice - Representing a 3-D

figure with a Net (Teacher Lesson) & (Student Sheet)

- Fluency & Skills Practice - Finding the Surface Area of a 3-D Figure (Teacher Lesson) & (Student Sheet)
- Tools for Instruction - Surface Area & Nets
- Math Center - Match Nets with Shapes and Surface Area (Below Level), (On Level), (Above Level), (Answer Key)
- Enrichment Activity - Box Stretch (Teacher Lesson) & (Student Lesson)

Illustrative Mathematics

- Families of Triangles
- Rectangle Perimeter 1

Week 7; Day 1 & 2 Distributive Property

Day 1; Distributive Property

Lesson

iReady

- Using the Distributive Property to Write Equivalent Expressions Lesson
- Fluency & Skills Practice (Answers)

Big Ideas

- Skills Review - Distributive Property (Answers)
- Resources by Chapter (Answer Key)

Hand2Mind

- Mini Lessons Book (grade 6) - Algebraic Equivalencies: Distributive Property (pgs. 58-59) & Student Sheet (pgs. 130-131)

Worksheets from Google Drive

- Pages 3-6

IXL

- 1. Multiply using the distributive property: area models 7XM
- 2. Multiply using the distributive property 2HH

Day 2; Factoring

Lesson

Open Up

- The Distributive Property (Part 1)
- The Distributive Property (Part 2)
- The Distributive Property (Part 3)

iReady

- Match Expressions (Answer Key)

Big Ideas

- Resources by Chapter (Answer Key)

Week 8; Day 1 & 2 Equivalent Expressions

Day 1 & 2; Factor Variable Expressions

Lesson

iReady

- Teaching Slides - Writing & Evaluating Expressions with Exponents

Hand2Mind

- Mini Lessons Book (grade 6) - Equivalent Expressions (pgs. 60-61) & Student Sheet (pg. 132)

IXL

- 3. Factor variable expressions: area models BGR

- 4. Factor variable expressions using the distributive property PGZ
- 5. Write equivalent expressions using properties R8H

Week 9; Day 1 & 2 Combining Like Terms

Day 1; Equivalent Expressions using Strip Models

Lesson

Open Up

- Equal and Equivalent

iReady

- Equivalent Expressions Lesson
- Identifying Equivalent Expressions Lesson
- Writing & Identifying Equivalent Expressions Lesson
- Fluency & Skills Practice (Answers)
- Write Equivalent Expressions
- Match Equivalent Expressions (Answers)
- Tile Connect It (Answers)

Google Drive

- Task Cards

IXL

- 1. Identify equivalent expressions using strip models W5U

Day 2; Combining Like Terms

Lesson

iReady

- Lesson Slides
- Fluency & Skills Practice (Answers)

Big Ideas

- Resources by Chapter (Answer Key)
- Skill Review - Simplifying Algebraic Expressions (Answer Key)

Illustrative Mathematics

- Equivalent Expressions
- Rectangle Perimeter 2

Google Drive

- Drag and Drop

IXL

- 2. Identify equivalent expressions I KFG
- 3. Identify equivalent expressions II HTG

Unit 3

Week 1; Day 1 & 2 Substitution
Day 1 & 2; Using Substitution (6.EE.B.5)

Lesson

Open Up

- Tape Diagrams and Equations
- Truth and Equations

iReady

- Solutions of Equations Lesson
- Understanding of Solutions of Equations Lesson
- Ideas About Solutions of Equations Lesson

- Fluency & Skills Practice (Answers)
- Test Solutions of Equations Activity
- Solutions of Equations (Answers)
- Keep it Balanced (Answers)
- Equation Writing (Answers)
- Number Fit (Answers)

Illustrative Mathematics

- Log Ride
- Make Use of Structure
- Exponent Experimentation 3
- Triangluar Tables
- All, Some, or None?

IXL

- 1. Does x satisfy an equation? VMB
- 2. Which x satisfies an equation? VG8
- 3. Solutions to inequalities P9N

Week 2; Day 1 & 2 Writing Expressions with Variables

Day 1 & 2 ; Writing Expressions with Variables

Lesson

iReady

- One Variable Equations Lesson
- Evaluate Variable Expressions

Illustrative Mathematics

- Firefighter Allocation
- Pennies to Heaven *This also requires other skills*

- Which Goes with Which?

IXL

- 1. Write variable expressions: word problems 6LQ

Week 3; Day 1 & 2 One Step Equations

Day 1; Solving Addition and Subtraction One-Step Equations

Lesson

Open Up

- Staying In Balance

iReady

- Solving One-Variable Addition Equations Lesson
- Fluency & Skills Practice (Answers)

Hand2Mind

- Gr. 6 Mini-Lesson - Equations with a Variable Pgs. 62-63 (Student Sheet pg. 133)
- Gr. 6 Mini lesson - Addition & Subtraction Equations Pgs. 64-65 (Student Sheet pg. 134)

IXL

- 4. Solve one-step addition and subtraction equations with whole numbers
- 7. Solve one-step addition and subtraction equations with decimals and fractions 5D2
- 9. Solve one-step addition and subtraction equations: word problems 35Q

Day 2; Solving Multiplying and Dividing One-Step Equations

Lesson

Maneuvering the Middle

- Task Cards (Sets 1 & 2)
- Digital Activity

Open Up

- Practicing Solving Equations and Representing Situations with Equations

iReady

- Solving One-Variable Multiplication Equations Lesson
- Writing & Solving One-Variable Equations Lesson
- Fluency & Skills Practice (Answers) *Multiplication*
- Solve Equations

Illustrative Mathematics

- Anna in D.C *This also requires other skills*
- Fruit Salad *This also requires other skills*
- Morning Walk

Hand2Mind

- Gr. 6 Mini-Lesson - Multiplication & Division Equations pgs. 66-67 (Student Sheet pg. 135)

IXL

- 5. Solve one-step multiplication and division equations with whole numbers JUA
- 6. Solve one-step equations with whole numbers WLR
- 8. Solve one-step multiplication and division equations with decimals and fractions T53
- 10. Solve one-step multiplication and division equations: word problems GMV
- 11. Write a one-step equation: word problems

YVX

- 12. Solve one-step equations: word problems
  BXY

Week 4; Day 1 & 2 Word Problems and Inequalities

Day 1; Writing and Solving One-Step Equation Word Problems

Lesson

Maneuvering the Middle

- Task Cards (Set 3)
- Digital Activity

iReady

- Writing & Solving One-Variable Equations Lesson
- Fluency & Skills Practice (Answers)

Day 2; Writing Inequalities

Lesson

iReady

- One Variable Inequalities Lesson
- Representing Inequalities Lesson
- Using Substitution to Identify Solutions of Inequalities Lesson
- Fluency & Skills Practice (Answers)
- High Point Inequalities (Answers)

Illustrative Mathematics

- Fishing Adventures 1

Hand2Mind

- Mini Lessons Book (grade 6) - Inequalities in the Real World (pgs. 68-69) & Student Sheet

(pgs. 136-137)

IXL

- 1. Graph inequalities on number lines CXX
- 2. Write inequalities from number lines N99
- 3. Write and graph inequalities: word problems AGB

Week 5; Day 1 & 2 Inequalities

Day 1; Writing Inequalities

Lesson

iReady

- One Variable Inequalities Lesson
- Representing Inequalities Lesson
- Using Substitution to Identify Solutions of Inequalities Lesson
- Fluency & Skills Practice (Answers)
- High Point Inequalities (Answers)

Illustrative Mathematics

- Fishing Adventures 1

Hand2Mind

- Mini Lessons Book (grade 6) - Inequalities in the Real World (pgs. 68-69) & Student Sheet (pgs. 136-137)

IXL

- 1. Graph inequalities on number lines CXX
- 2. Write inequalities from number lines N99
- 3. Write and graph inequalities: word problems AGB

Day 2; Graph Inequalities

Lesson

iReady

- Writing & Graphing One-Variable Inequalities Lesson
- Writing & Graphing One-Variable Inequalities Lesson
- Fluency & Skills Practice (Answers)
- Fluency & Skills Practice (Answers)
- Represent Inequalities on a Number Line Activity
- This and That (Answers)

Illustrative Mathematics

- Height Requirements

Week 6; Day 1 & 2 Independent & Dependent Variables

Day 1; Identifying Independent and Dependent Variables

Lesson

iReady

- Fluency & Skills Practice (Answers)
- Relate Independent and Dependent Variables
- Use Equation Vocabulary (Answers)

IXL

- Independent and dependent variables

1. Identify independent and dependent variables in tables and graphs YFW

2. Identify independent and dependent variables: word

problems 9UJ

Day 2; Finding Values in a Two-Variable Equation

Lesson

iReady

- Two-Variable Relationships Lesson
- Writing an Equation in Two Variables to Represent a Relationship Lesson
- Analyze the Relationship Between Two Variables Lesson
- Analyze Two Variable Relationships Lesson
- Fluency & Skills Practice (Answers)
- An Elephant-Sized Meal (Answers)

Hand2Mind

- Gr. 6 Mini-Lesson - Patterns & Function Tables pgs. 70-71 (Student Sheet pgs. 138-139)

IXL

- Find values

3. Find a value using two-variable equations 46Q

4. Find a value using two-variable equations: word problems XRJ

Week 7; Day 1 & 2 Tables

Day 1; Completing a two-way table

Lesson

IXL

- 5. Complete a table for a two-variable relationship TZB

Day 2; Graphing a Two-Variable Equation

Lesson

iReady

- Families of Triangles

IXL

- Make and interpret graphs

6. Identify the graph of an equation WN7

7. Complete a table and graph a two-variable equation EY5

8. Graph a two-variable equation TJA

9. Interpret a graph: word problems KZD

Week 8; Day 1 & 2 Writing Equations

Day 1; Writing an equation using a two-way table

Lesson

Illustrative Mathematics

- Chocolate Bar Sales

IXL

- Write equations

11. Solve word problems by finding two-variable equations UJQ

12. Write a two-variable equation from a table ZTL

Day 2; Writing an equation using a graph

Lesson

IXL

- 10. Write an equation from a graph using a table BCM
- 13. Write a two-variable equation 2RE

Unit 4

Week 1; Day 1 & 2 Writing Ratios and Solving Unit Rate

Day 1; Writing Ratios

Lesson

Open Up

- Introducing Ratios and Ratio Language
- Representing Ratios with Diagrams
- Color Mixtures

iReady

- Understand Ratio Concepts (Answer Key)

Illustrative Mathematics

- Games at Recess
- Bag of Marbles
- Evaluating Ratio Statements
- Many Ways to Say It
- Representing a Context with a Ratio

Hand 2 Mind

- Gr. 6 Mini-Lesson: Ratios (pgs. 8-9) & Student Sheet (pg. 100)

IXL

- 1. Write a ratio 83K
- 2. Write a ratio: word problems SBQ
- 3. Which model represents the ratio? 66V

Day 2; Proportions

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Recipes
- Defining Equivalent Ratios
- Part-Part-Whole Ratios
- The Burj Khalifa

Illustrative Mathematics

- Jim and Jesse's Money
- Gianna's Job
- Perfect Purple Paint I
- Party Planning

Hand 2 Mind

- Gr. 6 Mini-Lesson: Proportions (pgs. 10-11) & Student Sheet (pg. 101)
- Gr. 6 Mini-Lesson: Ratio and Proportion: Find the Ratio (pgs. 16-17) & Student Sheet (pg. 105)

Week 2; Day 1 & 2 Unit Rate & Equivalent Ratios

Day 1; Finding Unit Rate

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- How Much for One?
- Constant Speed
- Comparing Speeds and Prices

Illustrative Mathematics

- Mangos for Sale
- Price Per Pound and Pounds Per Dollar
- Hippos Love Pumpkins
- Ticket Booth
- Equivalent Ratios and Unit Rates
- Ticket Booth

Hand 2 Mind

- Gr. 6 Mini-Lesson: Unit Rates (pgs. 12-13) & Student Sheet (pg. 102)

IXL

1. Unit rates JSZ

Day 2; Tables of Equivalent Ratios

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 2)
- Digital Activity

Open Up

- Introducing Double Number Line Diagrams
- Creating Double Number Line Diagrams
- Comparing Situations by Examining Ratios
- Representing Ratios with Tables
- Navigating a Table of Equivalent Ratios
- Tables and Double Number Line Diagrams
- Solving Equivalent Ratio Problems
- Solving More Ratio Problems
- Interpreting Rates
- Equivalent Ratios Have the Same Unit Rates
- More About Constant Speed

iReady

- Find Equivalent Ratios (Answer Key)
- Find Equivalent Ratios Activity (Answer Key)

Illustrative Mathematics

- Apples to Apples
- Equivalent Ratios and Unit Rates
- Walk-a-thon 1

Hand 2 Mind

- Gr. 6 Mini-Lesson: Ratio Tables (pgs. 14-15) &
  Student Sheet (pgs. 103-104)

IXL

- Equivalent ratios

1. Identify equivalent ratios 2LM

2. Write an equivalent ratio NEA

3. Equivalent ratios: word problems RLZ

- Ratio tables

4. Ratio tables PPF

Week 3; Day 1 & 2 Comparing Ratios

Day 1; Making a Graph from a Ratio Table

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 3)
- Digital Activity

iReady

- Analyze Patterns and Relationships (Answer Key)
- Draw a Line Through It (Answer Key)

Illustrative Mathematics

- Mixing Concrete

IXL

- Plot on the coordinate plane

5. Ratios and rates: complete a table and make a graph
6Z2

Day 2; Decimal and Percent

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 1)
- Digital Activity

Week 4; Day 1 & 2 Percent, Decimal, Fraction

Day 1; Fraction and Decimal

Lesson

Maneuvering the Middle

- Task Cards (Set 2)
- Digital Activity

Hand 2 Mind

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

Day 2; Fraction and Percent

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards (Set 3)
- Digital Activity

iReady

- Match Percent, Fraction, Model (Answer Key)

IXL

- 3. Convert fractions to percents using grid models ZDZ

Week 5; Day 1 & 2 Percent, Decimal, Fraction

Day 1; Comparing and Ordering Fraction, Decimal, Percent

Lesson

Maneuvering the Middle

- Task Cards
- Digital Activity

IXL

- Convert between fractions, percents, and

decimals

4. Convert between percents, fractions, and decimals ZAV

5. Convert between percents, fractions, and decimals: word problems 7CZ

Day 2; Finding the Whole, Given the Part and Percent

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Percentages and Double Number Lines

Illustrative Mathematics

- Shirt Sale

IXL

- Find the whole

13. Find the total given a part and a percent D6L

- Solve percent problems

14. Solve percent problems ELY

15. Solve percent word problems YWB

Week 6; Day 1 & 2 Finding the Missing Piece

Day 1; Finding the Part, Given the Whole and Percent

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Benchmark Percentages

Day 2; Finding the Percent, Given the Part and Whole

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Finding This Percent of That
- Finding the Percentage

iReady

- Percent 4-in-a-Row (Answer Key)

Illustrative Mathematics

- Overlapping Squares
- Exam Scores

Hand 2 Mind

- Gr. 6 Mini-Lesson: Wholes and Percents (pgs. 18-19) & Student Sheet (pg. 106)

IXL

- Find a percent of a number

8. Percents of numbers and money amounts 8N4

9. Percents of numbers: word problems BBY

10. Percents of numbers: fractional and decimal percents CD5

- Solve percent problems

14. Solve percent problems ELY

15. Solve percent word problems YWB

Week 7; Day 1 & 2 Converting Measurements

Day 1; Convert Customary Units

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Anchoring Units of Measurement (good intro to units of measurement)

Illustrative Mathematics

- Converting Square Units
- Dana's House
- Simple Unit Conversion Using Ratio Reasoning

IXL

- 3. Customary unit conversions involving fractions and mixed numbers UHE

Day 2; Convert Metric Units

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Hand2Mind

- Gr. 5 Mini-Lesson Book - Measurement Conversion (pgs. 70-71) & Student Sheet (pg. 135)
- Gr. 5 Mini-Lesson Book - Solve Measurement

Problems (pgs. 72-73) & Students Sheet (pg. 136)

- Gr. 5 Geometry, Measurement, & Data Intervention Book - Convert Measurement Units (pgs. 22-23) & Student Sheet (pg. 58)

IXL

- 4. Convert and compare metric units FDH
- 5. Convert between customary and metric systems 5CF

Week 8; Day 1 & 2 Comparing Measurements

Day 1; Convert Customary & Metric Units

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

Open Up

- Measuring with Different-Sized Units
- Converting Units
- Solving Rate Problems

Illustrative Mathematics

- Unit Conversions

Hand 2 Mind

- Gr. 6 Mini-Lesson: Ratios and Measurements (pgs. 20-21) & Student Sheet (pg. 107)
- Gr. 5 Geometry, Measurement, & Data Intervention Book - Solve Measurement Conversion Problems (pgs. 24-25) & Student Sheet (pg. 59)

Day 2; Compare Customary & Metric Units

Lesson (NJCTL)

Maneuvering the Middle

- Task Cards
- Digital Activity

IXL

- 1. Convert and compare customary units 9TJ
- 2. Convert, compare, add, and subtract mixed customary units 97L

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

Suggested Strategies for Modification

Suggested Strategies for Modifications for Middle School Math Intervention