

**WEYMOUTH TOWNSHIP MATHEMATICS
CURRICULUM**

Content Area: Mathematics

Course Title: Middle School

Grade Level: 7

**Unit 1 Plan:
Ratios and Proportional Relationships**

**September-October
Ongoing**

**Unit 2 Plan:
The Number System**

**November/December
Ongoing**

**Unit 3 Plan:
Expressions and Equations**

**January/February
Ongoing**

**Unit 4 Plan:
Geometry**

**March/April
Ongoing**

**Unit 5 Plan:
Statistics and Probability**

**May/June
Ongoing**

Date Created:

July 2012

Revised:

July 2022

Board Approved on:

August 2022

Gr –7th Grade Unit 1-Ratios and Proportional Relationships

Unit Overview

Content topic and skill focus: Ratios and Proportional Relationships

Standard, Strand, and Content statements (CPIs listed below)

Learning in this unit will focus on: **Ratios and Proportional Relationships**

Standard MA.7.RP.A.1, MA.7.RP.A.2a, MA.7.RP.A.2b, MA.7.RP.A.2c, MA.7.RP.A.2d MA.7.RP.A.3

Content Statement: Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

Instructional Focus: Ratios and Proportional Relationships

Lesson #: Sections 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.1, 6.2,6.3, 6.4, 6.5, 6.6, 8.1, 8.2, 9.3, 10.2, 10.5, 10.6

Essential Questions:

- How do rates help you describe real-life problems?
- How can proportions help you decide when things are “fair”?
- How can you write a proportion that solves a problem in real life?
- How can you use ratio tables and cross products to solve proportions?
- How can you compare two rates graphically?
- How can you use a graph to show the relationship between two quantities that vary directly? How can you use an equation?
- How can you use models to estimate percent questions?
- How can you use an equivalent form of the percent proportion to solve a percent problem?
- What is the percent of decrease? What is the percent of increase?

Student Learning Objectives: STUDENTS WILL BE ABLE TO:

- MA.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.
- Section 5.1 Ratios and Ratio Tables, Section 5.2 Rates and Unit Rates, Section 5.3 Identifying Proportional Relationships, Section 5.5 Graphs of Proportional Relationships
- MA.7.RP.A.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship.
- MA.7.RP.A.2a Decide whether two quantities are in a proportional relationship.
- Section 5.3 Identifying Proportional Relationships, Section 5.5 Graphs of Proportional Relationships,
- MA.7.RP.A.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- Section 5.2 Rates and Unit Rates, Section 5.3 Identifying Proportional Relationships, Section 5.5 Graphs of Proportional Relationships
- MA.7.RP.A.2c Represent proportional relationships by equations.
- Section 5.5 Graphs of Proportional Relationships
- MA.7.RP.A.2d 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.

<ul style="list-style-type: none"> Section 5.5 Graphs of Proportional Relationships 7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Section 5.1 Ratios and Ratio Tables, Section 5.2 Rates and Unit Rates, Section 5.3 Identifying Proportional Relationships, Section 5.4 Writing and Solving Proportions, Section 5.5 Graphs of Proportional Relationships, Section 5.6 Scale Drawings, Section 6.2 The Percent Proportion, Section 6.3 The Percent Equation, Section 6.4 Percents of Increase and Decrease, Section 6.5 Discounts and Markups, Section 6.6 Simple Interest 	
<p>Suggested Activities</p> <ul style="list-style-type: none"> Introduction videos ixl graphic organizers scavenger hunts flash cards My Dear Aunt Sally Game online textbook lesson online questions correlated to textbook Stem Videos 	<p>Instructional Materials/Resources</p> <ul style="list-style-type: none"> Big Ideas Math Textbook copyright 2022 Big Ideas record and practice journal Big Ideas resource by chapter workbook Big Ideas skills review handbook teacher made materials instructional videos quizzes online chapter review online practice test online test cumulative assessments benchmark tests performance assessment
<p>Pacing: approx # of class periods: 30</p>	

NJ Student Learning Standards for Math: MA.7.RP.A.1, MA.7.RP.A.2a, MA.7.RP.A.2b, MA.7.RP.A.2c, MA.7.RP.A.2d MA.7.RP.A.3

Interdisciplinary Connections

Language Arts Literacy LA.W.7.1.B, LA.W.7.1.C, LA.W.7.1.E, LA.W.7.2.A, LA.W.7.2.B, LA. 7.2.C, LA.W.7.2.D, LA.W.7.2.F, LA.W.7.4, LA.L.7.2.B, LA.7.3.A, LA.L.7.4.C, LA.L.7.6

Career Readiness-Personal Financial Literacy PFL.9.1.8.CDM.1, PFL.9.1.8.CDM.2, PFL.9.1.8.CDM.3., PFL.9.1.8.CP.1, PFL.9.1.8.CP.1, PFL.9.1.8.FI.4

Career Awareness, Exploration, and Training WRK.9.2.8.CAP.3

Life Literacy and Key Skills TECH.9.4.8.CT.1, TECH.9.4.8.IML.4, TECH.9.4.8.TL.1, TECH. 9.4.8.TL.2, TECH. 9.4.8.TL.3

Computer Science and Design Thinking CS.6-8.8.1.8.DA.1, CS.6-8.8.1.8.DA.4, CS.6-8.8.1.8.DA.5, CS.6-8.8.2.8.ED.2, CS.6-8.8.2.8.ED.3, CS.6-8.8.2.8.ED.7

Integration of Technology

Math instruction engages students in a variety of learning experiences using technology. The following standards will be addressed through the activities in this unit:

TECH.8.1.8.A.CS1, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, TECH.8.1.8.A.2, TECH.8.1.8.D.CS1, TECH.8.1.8.D.CS2

21st Century Life and Career Skills

X	CRP1. Act as a responsible and contributing citizen and employee.
X	CRP2. Apply appropriate academic and technical skills.
X	CRP3. Attend to personal health and financial well-being.
X	CRP4. Communicate clearly and effectively and with reason.
	CRP5. Consider the environmental, social and economic impacts of decisions.
X	CRP6. Demonstrate creativity and innovation.
	CRP7. Employ valid and reliable research strategies.
X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
	CRP9. Model integrity, ethical leadership and effective management.
	CRP10. Plan education and career paths aligned to personal goals.
X	CRP11. Use technology to enhance productivity.
	CRP12. Work productively in teams while using cultural global competence.

Evidence of Learning

Summative and Benchmark Assessments	Formative Assessments and Alternative Activities	
Unit Pretest Unit Project Unit Test Performance Assessment Beginning of the year benchmark Trimester benchmark End of year benchmark	Hand Signals Student Conference Fun and Games Class work/participation Critical Thinking Skill activity Writing about Math Textbook Interactive Activities ixl record and practice journal	Lesson Review questions Reading Check questions Share/Pair Skills Practice Study Guide Teacher Observation Unit Review Vocabulary Review Graphic Organizers Homework and Practice pages Writing Connection Content Videos Online Questions

Instructional Delivery

Student learning experiences will include a combination of instructional strategies appropriate to the content and skills being taught. Lessons may include (but are not limited to) the following:

- Direct instruction/demonstration
- Interactive/Guided math strategies
- Cooperative learning activities
- Digital activities including videos, games, assessments
- Research projects and Presentation projects
- Small Group Instruction
- Share Examples
- Visual Aids
- Learning Centers
- Modeled, Shared, and Independent Activities
- Active Learning

Differentiated Instruction, Accommodations & Adaptations

Alternative Assessments
 Goal Setting with Students
 Homework Options
 Frequent Breaks
 Tests Read Aloud
 Color Coded Assignments/books/notebooks/folders

Cooperative Learning
 Picture Vocabulary Wall
 Anchor Charts of Concepts
 Change in Content, Process, Product
 Flexible Grouping
 Modified Class Assignments

Special Education/IEP	504
Assessments/assignments read orally w/ extended time Concept chunking Graphic organizer concept maps Picture study guides Small group instruction Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts	Extended time for assignments Frequent breaks Sign agenda book daily Study guides Graphic organizers
ELL	Gifted & Talented
Picture study guides Video presentation/Audio presentation Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts Spanish pupil editions including assessments	Independent extension research projects Jigsaw cooperative learning activities Student choice Advanced Activities Class grouping
<u>At Risk/I&RS</u>	<u>At Risk/I&RS</u>

Presentation accommodations (changes the way information is presented)

- Listen to audio recordings instead of reading text
- Learn content from videos, and digital media instead of reading print versions
- Work with fewer items per page or line
- Have a “designated reader”—someone who reads test questions aloud to
- Hear instructions spoken aloud
- Get class notes from teacher
- See an outline of a lesson
- Use visual presentations of verbal material, such as word webs
- Get a written list of instructions

Response accommodations (changes the way kids complete assignments or tests)

- Give responses in a form (spoken or written) that’s easier for them
- Dictate answers to a scribe who writes or types
- Use a spelling dictionary or digital spell-checker
- Use a laptop to type notes or give answers in class
- Use a calculator or table of “math facts”

Setting accommodations

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where they learn best (for example, near the teacher)
- Adjust lighting in the classroom
- Take a test in a small group setting

Timing accommodations

- Take more time to complete a task or a test
- Have extra time to process spoken information and directions
- Take frequent breaks, such as after completing a worksheet

Common Modifications

Assignment modifications

- Complete fewer or different homework problems than peers
- Write shorter answers to questions
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum modifications

- Learn different material (such as continuing to work on multiplication while classmates move on to fractions)
- Get graded or assessed using a different standard than other students
- Be excused from particular projects

Scheduling accommodations

- Take more time to complete a project
- Take a test in several sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization skills accommodations

- Mark notes with a highlighter
- Use a planner or organizer to help coordinate assignments
- Receive organizational skills instruction

Internet Resources

Big Idea Math Series <https://www.bigideasmath.com/>

ixl math <https://www.ixl.com/>

prodigy <https://www.prodigygame.com/>

National Library of Virtual Manipulatives <http://nlvm.usu.edu/en/nav/vlibrary.html>

Internet4classrooms https://www.internet4classrooms.com/skills_6th.htm

Future Smart Financial Literacy <https://platform.everfi.net/teacher/curriculum/25/demo>

Junior Achievement <http://learn.ja.org>

Gr –7th Grade Unit 2-The Number System

Unit Overview

Content topic and skill focus: The Number System

Standard, Strand, and Content statements (CPIs listed below)

Learning in this unit will focus on: The Number System

Standard MA.7.NS.A.1a, MA.7.NS.A.1b, MA.7.NS.A.1c, MA.7.NS.A.1d, MA.7.NS.A.2a, MA.7.NS.A.2b, MA.7.NS.A.2c, MA.7.NS.A.2d, MA.7.NS.A.3

Content Statement: Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

Instructional Focus: The Number System

Lesson #: Sections 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 6.1

Essential Questions:

- How can you use integers to represent the velocity and the speed of an object?
- Is the sum of two integers positive, negative, or zero? How can you tell?
- How are adding integers and subtracting integers related?
- Is the product of two integers positive, negative, or zero? How can you tell?
- Is the quotient of two integers positive, negative, or zero? How can you tell?
- How can you use a number line to order rational numbers?
- How can you use what you know about adding integers to add rational numbers?
- How can you use what you know about subtracting integers to subtract rational numbers?
- Why is the product of two negative rational numbers positive?

Student Learning Objectives: STUDENTS WILL BE ABLE TO:

- MA.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. a. Describe situations in which opposite quantities combine to make 0.
- Section 1.1 Rational Numbers
- MA.7.NS.A.1a
- Section 1.2 Adding Integers, Section 1.3 Adding Rational Numbers
- MA.7.NS.A.1b
- Section 1.2 Adding Integers, Section 1.3 Adding Rational Numbers, Section 1.4 Subtracting Integers, Section 1.5 Subtracting Rational Numbers
- MA.7.NS.A.1c
- Section 1.4 Subtracting Integers, Section 1.5 Subtracting Rational Numbers
- MA.7.NS.A.1d
- Section 1.2 Adding Integers, Section 1.3 Adding Rational Numbers, Section 1.4 Subtracting Integers, Section 1.5 Subtracting Rational Numbers
- MA.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- MA.7.NS.A.2a. 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.
- Section 2.1 Multiplying Integers, Section 2.4 Multiplying Rational Numbers, Section 2.5 Dividing Rational Numbers
- MA.7.NS.A.2b 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 a and b are integers, then $-(a/b) = (-a)/b = a/(-b)$. Interpret quotients of rational numbers by describing real-world contexts.
- Section 2.2 Dividing Integers, Section 2.3 Converting Between Fractions and Decimals, Section 2.5 Dividing Rational Numbers, Section 6.1 Fractions, Decimals, and Percents.
- MA.7.NS.A.2c 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.
- Section 2.1 Multiplying Integers, Section 2.4 Multiplying Rational Numbers, Sections 2.5 Dividing Rational Numbers.
- MA.7.NS.A.2d 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.
- Section 2.3 Converting Between Fractions and Decimals, Section 2.4 Multiplying Rational Numbers, Section 2.5 Dividing Rational Numbers
- MA.7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.
- Section 1.1 Rational Numbers, Section 1.2 Adding Integers, Section 1.3 Adding Rational Numbers, Section 1.4 Subtracting Integers, Section 1.5 Subtracting Rational Numbers, Section 2.1 Multiplying Integers, Section 2.2 Dividing Integers, Section 2.4 Multiplying Rational Numbers, Section 2.5 Dividing Rational Numbers

Suggested Activities

- Introduction videos
- ixl
- graphic organizers
- scavenger hunts
- flash cards
- My Dear Aunt Sally Game
- online textbook lesson
- online questions correlated to textbook

Instructional Materials/Resources

- Big Ideas Math Textbook copyright 2022
- Big Ideas record and practice journal
- Big Ideas resource by chapter workbook
- Big Ideas skills review handbook
- teacher made materials
- instructional videos
- quizzes
- online chapter review

<ul style="list-style-type: none"> • Stem Videos 	<ul style="list-style-type: none"> • online practice test • online test • cumulative assessments • benchmark tests • performance assessment
<p>Pacing: approx # of class periods: 25</p>	

NJ Student Learning Standards for Math: MA.7.NS.A.1a, MA.7.NS.A.1b, MA.7.NS.A.1c, MA.7.NS.A.1d, MA.7.NS.A.2a, MA.7.NS.A.2b, MA.7.NS.A.2c, MA.7.NS.A.2d, MA.7.NS.A.3

Interdisciplinary Connections

Language Arts Literacy LA.W.7.1.B, LA.W.7.1.C, LA.W.7.1.E, LA.W.7.2.A, LA.W.7.2.B, LA.7.2.C, LA.W.7.2.D, LA.W.7.2.F, LA.W.7.4, LA.L.7.2.B, LA.7.3.A, LA.L.7.4.C, LA.L.7.6

Career Readiness-Personal Financial Literacy PFL.9.1.8.CDM.1, PFL.9.1.8.CDM.2, PFL.9.1.8.CDM.3., PFL.9.1.8.CP.1, PFL.9.1.8.CP.1, PFL.9.1.8.FI.4

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Computer Science and Design Thinking CS.6-8.8.1.8.DA.1, CS.6-8.8.1.8.DA.4, CS.6-8.8.1.8.DA.5, CS.6-8.8.2.8.ED.2, CS.6-8.8.2.8.ED.3, CS.6-8.8.2.8.ED.7

Integration of Technology

Math instruction engages students in a variety of learning experiences using technology. The following standards will be addressed through the activities in this unit:

TECH.8.1.8.A.CS1, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, TECH.8.1.8.A.2, TECH.8.1.8.D.CS1, TECH.8.1.8.D.CS2

21st Century Life and Career Skills

X	CRP1. Act as a responsible and contributing citizen and employee.
X	CRP2. Apply appropriate academic and technical skills.
X	CRP3. Attend to personal health and financial well-being.
X	CRP4. Communicate clearly and effectively and with reason.
	CRP5. Consider the environmental, social and economic impacts of decisions.
X	CRP6. Demonstrate creativity and innovation.
	CRP7. Employ valid and reliable research strategies.

X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
	CRP9. Model integrity, ethical leadership and effective management.
	CRP10. Plan education and career paths aligned to personal goals.
X	CRP11. Use technology to enhance productivity.
	CRP12. Work productively in teams while using cultural global competence.

Evidence of Learning

Summative and Benchmark Assessments	Formative Assessments and Alternative Activities																										
Unit Pretest Unit Project Unit Test Performance Assessment Beginning of the year benchmark Trimester benchmark End of year benchmark	<table border="0"> <tr> <td>Hand Signals</td> <td>Lesson Review questions</td> </tr> <tr> <td>Student Conference</td> <td>Reading Check questions</td> </tr> <tr> <td>Fun and Games</td> <td>Share/Pair</td> </tr> <tr> <td>Class work/participation</td> <td>Skills Practice</td> </tr> <tr> <td>Critical Thinking Skill activity</td> <td>Study Guide</td> </tr> <tr> <td>Writing about Math</td> <td>Teacher Observation</td> </tr> <tr> <td>Textbook Interactive Activities</td> <td>Unit Review</td> </tr> <tr> <td>ixl</td> <td>Vocabulary Review</td> </tr> <tr> <td>record and practice journal</td> <td>Graphic Organizers</td> </tr> <tr> <td></td> <td>Homework and Practice pages</td> </tr> <tr> <td></td> <td>Writing Connection</td> </tr> <tr> <td></td> <td>Content Videos</td> </tr> <tr> <td></td> <td>Online Questions</td> </tr> </table>	Hand Signals	Lesson Review questions	Student Conference	Reading Check questions	Fun and Games	Share/Pair	Class work/participation	Skills Practice	Critical Thinking Skill activity	Study Guide	Writing about Math	Teacher Observation	Textbook Interactive Activities	Unit Review	ixl	Vocabulary Review	record and practice journal	Graphic Organizers		Homework and Practice pages		Writing Connection		Content Videos		Online Questions
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Instructional Delivery

Student learning experiences will include a combination of instructional strategies appropriate to the content and skills being taught. Lessons may include (but are not limited to) the following:

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- Small Group Instruction
- Share Examples
- Visual Aids
- Learning Centers
- Modeled, Shared, and Independent Activities
- Active Learning

Differentiated Instruction, Accommodations & Adaptations

Alternative Assessments
 Goal Setting with Students
 Homework Options
 Frequent Breaks
 Tests Read Aloud
 Color Coded Assignments/books/notebooks/folders

Cooperative Learning
 Picture Vocabulary Wall
 Anchor Charts of Concepts
 Change in Content, Process, Product
 Flexible Grouping
 Modified Class Assignments

Special Education/IEP	504
Assessments/assignments read orally w/ extended time Concept chunking Graphic organizer concept maps Picture study guides Small group instruction Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts	Extended time for assignments Frequent breaks Sign agenda book daily Study guides Graphic organizers
ELL	Gifted & Talented
Picture study guides Video presentation/Audio presentation Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts Spanish pupil editions including assessments	Independent extension research projects Jigsaw cooperative learning activities Student choice Advanced Activities Class grouping
At Risk/I&RS	At Risk/I&RS
<p>Presentation accommodations (changes the way information is presented)</p> <ul style="list-style-type: none"> • Listen to audio recordings instead of reading text • Learn content from videos, and digital media instead of reading print versions • Work with fewer items per page or line • Have a “designated reader”—someone who reads test questions aloud to • Hear instructions spoken aloud • Get class notes from teacher • See an outline of a lesson • Use visual presentations of verbal material, such as word webs • Get a written list of instructions <p>Response accommodations (changes the way kids complete assignments or tests)</p>	<p>Common Modifications</p> <p>Assignment modifications</p> <ul style="list-style-type: none"> • Complete fewer or different homework problems than peers • Write shorter answers to questions • Answer fewer or different test questions • Create alternate projects or assignments <p>Curriculum modifications</p> <ul style="list-style-type: none"> • Learn different material (such as continuing to work on multiplication while classmates move on to fractions) • Get graded or assessed using a different standard than other students • Be excused from particular projects

- Give responses in a form (spoken or written) that's easier for them
- Dictate answers to a scribe who writes or types
- Use a spelling dictionary or digital spell-checker
- Use a laptop to type notes or give answers in class
- Use a calculator or table of "math facts"

Setting accommodations

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where they learn best (for example, near the teacher)
- Adjust lighting in the classroom
- Take a test in a small group setting

Timing accommodations

- Take more time to complete a task or a test
- Have extra time to process spoken information and directions
- Take frequent breaks, such as after completing a worksheet

Scheduling accommodations

- Take more time to complete a project
- Take a test in several sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization skills accommodations

- Mark notes with a highlighter
- Use a planner or organizer to help coordinate assignments
- Receive organizational skills instruction

Internet Resources

Big Idea Math Series <https://www.bigideasmath.com/>

ixl math <https://www.ixl.com/>

prodigy <https://www.prodigygame.com/>

National Library of Virtual Manipulatives <http://nlvm.usu.edu/en/nav/vlibrary.html>

Internet4classrooms https://www.internet4classrooms.com/skills_6th.htm

Future Smart Financial Literacy <https://platform.everfi.net/teacher/curriculum/25/demo>

Junior Achievement <http://learn.ja.org>

Gr –7th Grade Unit 3-Expressions and Equations

Unit Overview

Content topic and skill focus: Expressions and Equations

Standard, Strand, and Content statements (CPIs listed below)

Learning in this unit will focus on: Expressions and Equations

Standard: MA.7.EE.A.1, MA.7.EE.A.2, MA.7.EE.B.3, MA.7.EE.B.4, MA.7.EE.B.4a, MA.7.EE.B.4b

Content Statement: Students use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

Instructional Focus: Expressions and Equations

Lesson #: Sections 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6

Essential Questions:

- How can you simplify an algebraic expression?
- How can you use algebra tiles to add or subtract algebraic expressions?
- How can you use algebra tiles to solve addition and subtraction equations?
- How can you use multiplication or division to solve equations?
- How can you use algebra tiles to solve a two-step equation?
- How can you use a number line to represent solutions of an inequality?
- How can you use addition or subtraction to solve an inequality?
- How can you use multiplication or division to solve an inequality?
- How can you use an inequality to describe the dimensions of a figure?
- How does the decimal point move when you rewrite a percent as a decimal and when you rewrite a decimal as a percent?
- How can you order numbers that are written as fractions, decimals, and percents?
- How can you use an equivalent form of the percent proportion to solve a percent problem?

Student Learning Objectives: STUDENTS WILL BE ABLE TO:

- MA.7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- Section 3.1 Algebraic Expressions, Section 3.2 Adding and Subtracting Linear Expressions, Section 3.3 The Distributive Property, Section 3.4 Factoring Expressions
- MA.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.
- Section 3.1 Algebraic Expressions, Section 3.2 Adding and Subtracting Linear Expressions, Section 3.3 The Distributive Property, Section 3.4 Factoring Expressions, Section 6.4 Percents of Increase and Decrease, Section 6.5 Discounts and Markups, Section 6.6 Simple Interest, Section 9.2 Areas of Circles
- MA.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. 6.6 Simple Interest, Section 7.1 Probability, Section 7.2 Experimental and Theoretical Probability, Section 7.3 Compound Events, Section 7.4 Simulations.
- MA.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.

<ul style="list-style-type: none"> ● MA.7.EE.B.4a 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 fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. ● Section 4.1 Solving Equations using addition or subtraction, Section 4.2 Solving Equations using multiplication or division, Section 4.3 Solving two-step equations, Section 6.2 The percent proportion, Section 6.3 The percent equation, Section 6.5 Discounts and markups, Section 6.6 Simple interest, Section 7.2 Experimental and theoretical probability, Section 9.1 Circles and Circumference, Section 9.5 Finding unknown angle measures, Section 10.4 Volumes of prisms ● MA.7.EE.B.4b 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. ● Section 4.4 Writing and Graphing Inequalities, Section 4.5 Solving Inequalities Using Addition or Subtraction, Section 4.6 Solving Inequalities using multiplication or division, Section 4.7 Solving Two-step Inequalities 	
<p>Suggested Activities</p> <ul style="list-style-type: none"> ● Introduction videos ● ixl ● graphic organizers ● scavenger hunts ● flash cards ● My Dear Aunt Sally Game ● online textbook lesson ● online questions correlated to textbook ● Stem Videos 	<p>Instructional Materials/Resources</p> <ul style="list-style-type: none"> ● Big Ideas Math Textbook copyright 2022 ● Big Ideas record and practice journal ● Big Ideas resource by chapter workbook ● Big Ideas skills review handbook ● teacher made materials ● instructional videos ● quizzes ● online chapter review ● online practice test ● online test ● cumulative assessments ● benchmark tests ● performance assessment
<p>Pacing: approx # of class periods: 30</p>	

NJ Student Learning Standards for Math: MA.7.EE.A.1, MA.7.EE.A.2, MA.7.EE.B.3, MA.7.EE.B.4, MA.7.EE.B.4a, MA.7.EE.B.4b

Interdisciplinary Connections

Language Arts Literacy LA.W.7.1.B, LA.W.7.1.C, LA.W.7.1.E, LA.W.7.2.A, LA.W.7.2.B, LA. 7.2.C, LA.W.7.2.D, LA.W.7.2.F, LA.W.7.4, LA.L.7.2.B, LA.7.3.A, LA.L.7.4.C, LA.L.7.6

Career Readiness-Personal Financial Literacy PFL.9.1.8.CDM.1, PFL.9.1.8.CDM.2, PFL.9.1.8.CDM.3., PFL.9.1.8.CP.1, PFL.9.1.8.FI.4

Career Awareness, Exploration, and Training WRK.9.2.8.CAP.3

Life Literacy and Key Skills TECH.9.4.8.CT.1, TECH.9.4.8.IML.4, TECH.9.4.8.TL.1, TECH. 9.4.8.TL.2, TECH. 9.4.8.TL.3

Computer Science and Design Thinking CS.6-8.8.1.8.DA.1, CS.6-8.8.1.8.DA.4, CS.6-8.8.1.8.DA.5, CS.6-8.8.2.8.ED.2, CS.6-8.8.2.8.ED.3, CS.6-8.8.2.8.ED.7

Integration of Technology

Math instruction engages students in a variety of learning experiences using technology. The following standards will be addressed through the activities in this unit:

TECH.8.1.8.A.CS1, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, TECH.8.1.8.A.2, TECH.8.1.8.D.CS1, TECH.8.1.8.D.CS2

21st Century Life and Career Skills

X	CRP1. Act as a responsible and contributing citizen and employee.
X	CRP2. Apply appropriate academic and technical skills.
X	CRP3. Attend to personal health and financial well-being.
X	CRP4. Communicate clearly and effectively and with reason.
	CRP5. Consider the environmental, social and economic impacts of decisions.
X	CRP6. Demonstrate creativity and innovation.
	CRP7. Employ valid and reliable research strategies.
X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
	CRP9. Model integrity, ethical leadership and effective management.
	CRP10. Plan education and career paths aligned to personal goals.
X	CRP11. Use technology to enhance productivity.
	CRP12. Work productively in teams while using cultural global competence.

Evidence of Learning

Summative and Benchmark Assessments	Formative Assessments and Alternative Activities	
Unit Pretest	Hand Signals	Lesson Review questions
Unit Project	Student Conference	Reading Check questions
Unit Test	Fun and Games	Share/Pair
Performance Assessment	Class work/participation	Skills Practice
Beginning of the year benchmark	Critical Thinking Skill activity	Study Guide
Trimester benchmark	Writing about Math	Teacher Observation
End of year benchmark	Textbook Interactive Activities	Unit Review
	ixl	Vocabulary Review
	record and practice journal	Graphic Organizers

	Homework and Practice pages Writing Connection Content Videos Online Questions
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Instructional Delivery

Student learning experiences will include a combination of instructional strategies appropriate to the content and skills being taught. Lessons may include (but are not limited to) the following:

- Direct instruction/demonstration
- Interactive/Guided math strategies
- Cooperative learning activities
- Digital activities including videos, games, assessments
- Research projects and Presentation projects
- Small Group Instruction
- Share Examples
- Visual Aids
- Learning Centers
- Modeled, Shared, and Independent Activities
- Active Learning

Differentiated Instruction, Accommodations & Adaptations

Alternative Assessments	Cooperative Learning
Goal Setting with Students	Picture Vocabulary Wall
Homework Options	Anchor Charts of Concepts
Frequent Breaks	Change in Content, Process, Product
Tests Read Aloud	Flexible Grouping
Color Coded Assignments/books/notebooks/folders	Modified Class Assignments

Special Education/IEP	504
Assessments/assignments read orally w/ extended time Concept chunking Graphic organizer concept maps Picture study guides Small group instruction Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts	Extended time for assignments Frequent breaks Sign agenda book daily Study guides Graphic organizers
ELL	Gifted & Talented
Picture study guides Video presentation/Audio presentation Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts Spanish pupil editions including assessments	Independent extension research projects Jigsaw cooperative learning activities Student choice Advanced Activities Class grouping

At Risk/I&RS	At Risk/I&RS
<p>Presentation accommodations (changes the way information is presented)</p> <ul style="list-style-type: none"> ● Listen to audio recordings instead of reading text ● Learn content from videos, and digital media instead of reading print versions ● Work with fewer items per page or line ● Have a “designated reader”—someone who reads test questions aloud to ● Hear instructions spoken aloud ● Get class notes from teacher ● See an outline of a lesson ● Use visual presentations of verbal material, such as word webs ● Get a written list of instructions <p>Response accommodations (changes the way kids complete assignments or tests)</p> <ul style="list-style-type: none"> ● Give responses in a form (spoken or written) that’s easier for them ● Dictate answers to a scribe who writes or types ● Use a spelling dictionary or digital spell-checker ● Use a laptop to type notes or give answers in class ● Use a calculator or table of “math facts” <p>Setting accommodations</p> <ul style="list-style-type: none"> ● Work or take a test in a different setting, such as a quiet room with few distractions ● Sit where they learn best (for example, near the teacher) ● Adjust lighting in the classroom ● Take a test in a small group setting <p>Timing accommodations</p> <ul style="list-style-type: none"> ● Take more time to complete a task or a test ● Have extra time to process spoken information and directions ● Take frequent breaks, such as after completing a worksheet 	<p>Common Modifications</p> <p>Assignment modifications</p> <ul style="list-style-type: none"> ● Complete fewer or different homework problems than peers ● Write shorter answers to questions ● Answer fewer or different test questions ● Create alternate projects or assignments <p>Curriculum modifications</p> <ul style="list-style-type: none"> ● Learn different material (such as continuing to work on multiplication while classmates move on to fractions) ● Get graded or assessed using a different standard than other students ● Be excused from particular projects <p>Scheduling accommodations</p> <ul style="list-style-type: none"> ● Take more time to complete a project ● Take a test in several sessions or over several days ● Take sections of a test in a different order ● Take a test at a specific time of day <p>Organization skills accommodations</p> <ul style="list-style-type: none"> ● Mark notes with a highlighter ● Use a planner or organizer to help coordinate assignments ● Receive organizational skills instruction

Internet Resources

Big Idea Math Series <https://www.bigideasmath.com/>

ixl math <https://www.ixl.com/>

prodigy <https://www.prodigygame.com/>

National Library of Virtual Manipulatives <http://nlvm.usu.edu/en/nav/vlibrary.html>

Internet4classrooms https://www.internet4classrooms.com/skills_6th.htm

Future Smart Financial Literacy <https://platform.everfi.net/teacher/curriculum/25/demo>

Junior Achievement <http://learn.ja.or>

Gr –7th Grade Unit 4-Geometry

Unit Overview

Content topic and skill focus: Geometry

Standard, Strand, and Content statements (CPIs listed below)

Learning in this unit will focus on: Geometry

Standard MA.7.G.A.1, MA.7.G.A.2, MA.7.G.A.3, MA.7.G.B.4, MA.7.G.B.5, MA.7.G.B.6

Content Statement: Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems New Jersey Student Learning Standards for Mathematics 47 involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

Instructional Focus: Geometry

Lesson #: Sections 5.6, 9.1, 9.2, 9.3, 9.5, 10.1, 10.2, 10.3, 10.4, 10.5

Essential Questions:

- What can you conclude about the angles formed by two intersecting lines?
- How can you classify two angles as complementary or supplementary?
- How can you construct triangles?
- How can you classify quadrilaterals?
- How can you enlarge or reduce a drawing proportionally?
- How can you find the circumference of a circle?
- How can you find the perimeter of a composite figure?
- How can you find the area of a circle?
- How can you find the area of a composite figure?
- How can you find the surface area of a prism?
- How can you find the surface area of a pyramid?

Student Learning Objectives: STUDENTS WILL BE ABLE TO:

- MA.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- Section 5.6 Scale Drawings, Section 9.4 Constructing Polygons, Section 10.3 Surface Areas of Pyramids

<ul style="list-style-type: none"> ● MA.7.G.A.2 Draw (freehand, with a ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. Section 9.4 Constructing Polygons ● MA.7.GA.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangle pyramids. ● Section 10.6 ● MA.7.G.B.4 Know the formula for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. ● Section 9.1 Circles and Circumference, Section 9.2 Areas of Circles, Section 9.3 Perimeters and Areas of Composite Figures ● MA.7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. ● Section 9.5 ● MA.7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. ● Section 9.3 Perimeters and Areas of Composite Figures ● Section 10.1 Surface Areas of Prisms ● Section 10.3 Surface Areas of Pyramids ● Section 10.4 Volumes of Prisms ● Section 10.5 Volumes of Pyramids 	
<p>Suggested Activities</p> <ul style="list-style-type: none"> ● Introduction videos ● ixl ● graphic organizers ● scavenger hunts ● flash cards ● My Dear Aunt Sally Game ● online textbook lesson ● online questions correlated to textbook ● Stem Videos 	<p>Instructional Materials/Resources</p> <ul style="list-style-type: none"> ● Big Ideas Math Textbook copyright 2022 ● Big Ideas record and practice journal ● Big Ideas resource by chapter workbook ● Big Ideas skills review handbook ● teacher made materials ● instructional videos ● quizzes ● online chapter review ● online practice test ● online test ● cumulative assessments ● benchmark tests ● performance assessment
<p>Pacing: approx # of class periods: 33</p>	

NJ Student Learning Standards for Math: MA.7.G.A.1, MA.7.G.A.2, MA.7.G.A.3, MA.7.G.B.4, MA.7.G.B.5, MA.7.G.B.6

Interdisciplinary Connections

Language Arts Literacy LA.W.7.1.B, LA.W.7.1.C, LA.W.7.1.E, LA.W.7.2.A, LA.W.7.2.B, LA. 7.2.C, LA.W.7.2.D, LA.W.7.2.F, LA.W.7.4, LA.L.7.2.B, LA.7.3.A, LA.L.7.4.C, LA.L.7.6

Career Readiness-Personal Financial Literacy PFL.9.1.8.CDM.1, PFL.9.1.8.CDM.2, PFL.9.1.8.CDM.3., PFL.9.1.8.CP.1, PFL.9.1.8.CP.1, PFL.9.1.8.FI.4

Career Awareness, Exploration, and Training WRK.9.2.8.CAP.3

Life Literacy and Key Skills TECH.9.4.8.CT.1, TECH.9.4.8.IML.4, TECH.9.4.8.TL.1, TECH. 9.4.8.TL.2, TECH. 9.4.8.TL.3

Computer Science and Design Thinking CS.6-8.8.1.8.DA.1, CS.6-8.8.1.8.DA.4, CS.6-8.8.1.8.DA.5, CS.6-8.8.2.8.ED.2, CS.6-8.8.2.8.ED.3, CS.6-8.8.2.8.ED.7

Integration of Technology

Math instruction engages students in a variety of learning experiences using technology. The following standards will be addressed through the activities in this unit:

TECH.8.1.8.A.CS1, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, TECH.8.1.8.A.2, TECH.8.1.8.D.CS1, TECH.8.1.8.D.CS2

21st Century Life and Career Skills

X	CRP1. Act as a responsible and contributing citizen and employee.
X	CRP2. Apply appropriate academic and technical skills.
X	CRP3. Attend to personal health and financial well-being.
X	CRP4. Communicate clearly and effectively and with reason.
	CRP5. Consider the environmental, social and economic impacts of decisions.
X	CRP6. Demonstrate creativity and innovation.
	CRP7. Employ valid and reliable research strategies.
X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
	CRP9. Model integrity, ethical leadership and effective management.
	CRP10. Plan education and career paths aligned to personal goals.
X	CRP11. Use technology to enhance productivity.
	CRP12. Work productively in teams while using cultural global competence.

Evidence of Learning

Summative and Benchmark Assessments	Formative Assessments and Alternative Activities
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Unit Pretest Unit Project Unit Test Performance Assessment Beginning of the year benchmark Trimester benchmark End of year benchmark	Hand Signals Student Conference Fun and Games Class work/participation Critical Thinking Skill activity Writing about Math Textbook Interactive Activities ixl record and practice journal	Lesson Review questions Reading Check questions Share/Pair Skills Practice Study Guide Teacher Observation Unit Review Vocabulary Review Graphic Organizers Homework and Practice pages Writing Connection Content Videos Online Questions
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Instructional Delivery

Student learning experiences will include a combination of instructional strategies appropriate to the content and skills being taught. Lessons may include (but are not limited to) the following:

- Direct instruction/demonstration
- Interactive/Guided math strategies
- Cooperative learning activities
- Digital activities including videos, games, assessments
- Research projects and Presentation projects
- Small Group Instruction
- Share Examples
- Visual Aids
- Learning Centers
- Modeled, Shared, and Independent Activities
- Active Learning

Differentiated Instruction, Accommodations & Adaptations

Alternative Assessments Goal Setting with Students Homework Options Frequent Breaks Tests Read Aloud Color Coded Assignments/books/notebooks/folders	Cooperative Learning Picture Vocabulary Wall Anchor Charts of Concepts Change in Content, Process, Product Flexible Grouping Modified Class Assignments
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Special Education/IEP	504
Assessments/assignments read orally w/ extended time Concept chunking Graphic organizer concept maps Picture study guides Small group instruction Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts	Extended time for assignments Frequent breaks Sign agenda book daily Study guides Graphic organizers

ELL	Gifted & Talented
Picture study guides Video presentation/Audio presentation Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts Spanish pupil editions including assessments	Independent extension research projects Jigsaw cooperative learning activities Student choice Advanced Activities Class grouping
At Risk/I&RS	At Risk/I&RS
<p>Presentation accommodations (changes the way information is presented)</p> <ul style="list-style-type: none"> ● Listen to audio recordings instead of reading text ● Learn content from videos, and digital media instead of reading print versions ● Work with fewer items per page or line ● Have a “designated reader”—someone who reads test questions aloud to ● Hear instructions spoken aloud ● Get class notes from teacher ● See an outline of a lesson ● Use visual presentations of verbal material, such as word webs ● Get a written list of instructions <p>Response accommodations (changes the way kids complete assignments or tests)</p> <ul style="list-style-type: none"> ● Give responses in a form (spoken or written) that’s easier for them ● Dictate answers to a scribe who writes or types ● Use a spelling dictionary or digital spell-checker ● Use a laptop to type notes or give answers in class ● Use a calculator or table of “math facts” <p>Setting accommodations</p> <ul style="list-style-type: none"> ● Work or take a test in a different setting, such as a quiet room with few distractions ● Sit where they learn best (for example, near the teacher) ● Adjust lighting in the classroom 	<p>Common Modifications</p> <p>Assignment modifications</p> <ul style="list-style-type: none"> ● Complete fewer or different homework problems than peers ● Write shorter answers to questions ● Answer fewer or different test questions ● Create alternate projects or assignments <p>Curriculum modifications</p> <ul style="list-style-type: none"> ● Learn different material (such as continuing to work on multiplication while classmates move on to fractions) ● Get graded or assessed using a different standard than other students ● Be excused from particular projects <p>Scheduling accommodations</p> <ul style="list-style-type: none"> ● Take more time to complete a project ● Take a test in several sessions or over several days ● Take sections of a test in a different order ● Take a test at a specific time of day <p>Organization skills accommodations</p> <ul style="list-style-type: none"> ● Mark notes with a highlighter ● Use a planner or organizer to help coordinate assignments ● Receive organizational skills instruction

- Take a test in a small group setting

Timing accommodations

- Take more time to complete a task or a test
- Have extra time to process spoken information and directions
- Take frequent breaks, such as after completing a worksheet

Internet Resources

Big Idea Math Series <https://www.bigideasmath.com/>

ixl math <https://www.ixl.com/>

prodigy <https://www.prodigygame.com/>

National Library of Virtual Manipulatives <http://nlvm.usu.edu/en/nav/vlibrary.html>

Internet4classrooms https://www.internet4classrooms.com/skills_6th.htm

Future Smart Financial Literacy <https://platform.everfi.net/teacher/curriculum/25/demo>

Junior Achievement <http://learn.ja.org>

Gr –7th Grade Unit 5-Statistics and Probability

Unit Overview

Content topic and skill focus: Statistics and Probability

Standard, Strand, and Content statements (CPIs listed below)

Learning in this unit will focus on: Statistics and Probability

Standard MA.7.SP.A.1, MA.7.SP.A.2, MA.7.SP.A.3, MA.7.SP.A.4, MA.7.SP.A.5, MA.7.SP.A.6 ,MA.7.SP.A.7, MA.7.SP.A.8

Content Statement: Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Instructional Focus: Statistics and Probability

Lesson #: Sections 8.1, 8.2, 8.3, 8.4, 7.1, 7.2, 7.3, 7.4, 8.1, 8.2, 8.3, 8.4, 10.1, 10.2, 10.3, 10.4, 10.5

Essential Questions:

- In an experiment, how can you determine the number of possible results?
- How can you describe the likelihood of an event?
- How can you use relative frequencies to find probabilities?
- How can you find the number of possible outcomes of one or more events?
- What is the difference between dependent and independent events?

- How can you determine whether a sample accurately represents a population?
- How can you compare data sets that represent two populations?

Student Learning Objectives: STUDENTS WILL BE ABLE TO:

- MA.7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- Section 8.1 Samples and Populations, Section 8.2 Using Random Samples to describe populations, Section 8.4 Using random samples to compare populations
- MA.7.SP.A.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.
- Section 8.1 Samples and Populations, Section 8.2 Using Random Samples to describe populations, Section 8.3 Comparing Populations
- MA.7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.
- Section 8.3 Comparing Populations
- MA.7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
- Section 8.4 Using random samples to compare populations.
- MA.7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely or likely, and a probability near 1 indicates a likely event.
- Section 7.1 Probability
- Section 7.2 Experimental and Theoretical Probability, Section 7.3 Compound Events, Section 7.4 Simulations
- MA.7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
- Section 7.1 Probability, Section 7.2 Experimental and Theoretical Probability
- 7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- MA.7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
- Section 7.2 Experimental and Theoretical Probability, Section 7.3 Compound Events
- MA.7.SP.C.7b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
- Section 7.1 Probability, Section 7.2 Experimental and Theoretical Probability
- MA.7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
- MA.7.SP.C.8a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
- Section 7.3 Compound Events, Section 7.4 Simulations
- MA.7.SP.C.8b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language, identify the outcomes in the sample space which compose the event.

<ul style="list-style-type: none"> ● Section 7.3 Compound Events ● MA.7.SP.C.8c. Design and use a simulation to generate frequencies for compound events. ● Section 7.4 Simulations 	
<p>Suggested Activities</p> <ul style="list-style-type: none"> ● Introduction videos ● ixl ● graphic organizers ● scavenger hunts ● flash cards ● My Dear Aunt Sally Game ● online textbook lesson ● online questions correlated to textbook ● Stem Videos 	<p>Instructional Materials/Resources</p> <ul style="list-style-type: none"> ● Big Ideas Math Textbook copyright 2022 ● Big Ideas record and practice journal ● Big Ideas resource by chapter workbook ● Big Ideas skills review handbook ● teacher made materials ● instructional videos ● quizzes ● online chapter review ● online practice test ● online test ● cumulative assessments ● benchmark tests ● performance assessment
<p>Pacing: approx # of class periods: 20</p>	

NJ Student Learning Standards for Math: MA.7.SP.A.1, MA.7.SP.A.2, MA.7.SP.A.3, MA.7.SP.A.4, MA.7.SP.A.5, MA.7.SP.A.6, MA.7.SP.A.7, MA.7.SP.A.8

Interdisciplinary Connections

Language Arts Literacy LA.W.7.1.B, LA.W.7.1.C, LA.W.7.1.E, LA.W.7.2.A, LA.W.7.2.B, LA. 7.2.C, LA.W.7.2.D, LA.W.7.2.F, LA.W.7.4, LA.L.7.2.B, LA.7.3.A, LA.L.7.4.C, LA.L.7.6

Career Readiness-Personal Financial Literacy PFL.9.1.8.CDM.1, PFL.9.1.8.CDM.2, PFL.9.1.8.CDM.3., PFL.9.1.8.CP.1, PFL.9.1.8.FI.4

Career Awareness, Exploration, and Training WRK.9.2.8.CAP.3

Life Literacy and Key Skills TECH.9.4.8.CT.1, TECH.9.4.8.IML.4, TECH.9.4.8.TL.1, TECH. 9.4.8.TL.2, TECH. 9.4.8.TL.3

Computer Science and Design Thinking CS.6-8.8.1.8.DA.1, CS.6-8.8.1.8.DA.4, CS.6-8.8.1.8.DA.5, CS.6-8.8.2.8.ED.2, CS.6-8.8.2.8.ED.3, CS.6-8.8.2.8.ED.7

Integration of Technology

Math instruction engages students in a variety of learning experiences using technology. The following standards will be addressed through the activities in this unit:

TECH.8.1.8.A.CS1, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, TECH.8.1.8.A.2, TECH.8.1.8.D.CS1, TECH.8.1.8.D.CS2

21st Century Life and Career Skills

X	CRP1. Act as a responsible and contributing citizen and employee.
X	CRP2. Apply appropriate academic and technical skills.
X	CRP3. Attend to personal health and financial well-being.
X	CRP4. Communicate clearly and effectively and with reason.
	CRP5. Consider the environmental, social and economic impacts of decisions.
X	CRP6. Demonstrate creativity and innovation.
	CRP7. Employ valid and reliable research strategies.
X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
	CRP9. Model integrity, ethical leadership and effective management.
	CRP10. Plan education and career paths aligned to personal goals.
X	CRP11. Use technology to enhance productivity.
	CRP12. Work productively in teams while using cultural global competence.

Evidence of Learning

Summative and Benchmark Assessments	Formative Assessments and Alternative Activities	
Unit Pretest Unit Project Unit Test Performance Assessment Beginning of the year benchmark Trimester benchmark End of year benchmark	Hand Signals Student Conference Fun and Games Class work/participation Critical Thinking Skill activity Writing about Math Textbook Interactive Activities ixl record and practice journal	Lesson Review questions Reading Check questions Share/Pair Skills Practice Study Guide Teacher Observation Unit Review Vocabulary Review Graphic Organizers Homework and Practice pages Writing Connection Content Videos Online Questions

Instructional Delivery

Student learning experiences will include a combination of instructional strategies appropriate to the content and skills being taught. Lessons may include (but are not limited to) the following:

- Direct instruction/demonstration

- Interactive/Guided math strategies
- Cooperative learning activities
- Digital activities including videos, games, assessments
- Research projects and Presentation projects
- Small Group Instruction
- Share Examples
- Visual Aids
- Learning Centers
- Modeled, Shared, and Independent Activities
- Active Learning

Differentiated Instruction, Accommodations & Adaptations

Alternative Assessments	Cooperative Learning
Goal Setting with Students	Picture Vocabulary Wall
Homework Options	Anchor Charts of Concepts
Frequent Breaks	Change in Content, Process, Product
Tests Read Aloud	Flexible Grouping
Color Coded Assignments/books/notebooks/folders	Modified Class Assignments

Special Education/IEP	504
Assessments/assignments read orally w/ extended time Concept chunking Graphic organizer concept maps Picture study guides Small group instruction Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts	Extended time for assignments Frequent breaks Sign agenda book daily Study guides Graphic organizers
ELL	Gifted & Talented
Picture study guides Video presentation/Audio presentation Tests modified to include a word bank, drawings, and diagrams while still covering the essential concepts Spanish pupil editions including assessments	Independent extension research projects Jigsaw cooperative learning activities Student choice Advanced Activities Class grouping
At Risk/I&RS	At Risk/I&RS

Presentation accommodations (changes the way information is presented)

- Listen to audio recordings instead of reading text
- Learn content from videos, and digital media instead of reading print versions
- Work with fewer items per page or line
- Have a “designated reader”—someone who reads test questions aloud to
- Hear instructions spoken aloud
- Get class notes from teacher
- See an outline of a lesson
- Use visual presentations of verbal material, such as word webs
- Get a written list of instructions

Response accommodations (changes the way kids complete assignments or tests)

- Give responses in a form (spoken or written) that’s easier for them
- Dictate answers to a scribe who writes or types
- Use a spelling dictionary or digital spell-checker
- Use a laptop to type notes or give answers in class
- Use a calculator or table of “math facts”

Setting accommodations

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where they learn best (for example, near the teacher)
- Adjust lighting in the classroom
- Take a test in a small group setting

Timing accommodations

- Take more time to complete a task or a test
- Have extra time to process spoken information and directions
- Take frequent breaks, such as after completing a worksheet

Common Modifications

Assignment modifications

- Complete fewer or different homework problems than peers
- Write shorter answers to questions
- Answer fewer or different test questions
- Create alternate projects or assignments

Curriculum modifications

- Learn different material (such as continuing to work on multiplication while classmates move on to fractions)
- Get graded or assessed using a different standard than other students
- Be excused from particular projects

Scheduling accommodations

- Take more time to complete a project
- Take a test in several sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization skills accommodations

- Mark notes with a highlighter
- Use a planner or organizer to help coordinate assignments
- Receive organizational skills instruction

Internet Resources

Big Idea Math Series <https://www.bigideasmath.com/>

ixl math <https://www.ixl.com/>

prodigy <https://www.prodigygame.com/>

National Library of Virtual Manipulatives <http://nlvm.usu.edu/en/nav/vlibrary.html>

Internet4classrooms https://www.internet4classrooms.com/skills_6th.htm

Future Smart Financial Literacy <https://platform.everfi.net/teacher/curriculum/25/demo>

Junior Achievement <http://learn.ja.org>