









Trimester:	Unit Title:	Recommended Instructional Days:
1	Numerical Expressions and Factors	10 - 14
Domain: Ratio and Proportional Relationships, The Number System & Expressions and Equations		
<p><i>Strand:</i></p> <p> 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. d. Use ratio reasoning to convert measurements units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p> 6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i></p> <p> 6.EE.A.1 Write and evaluate numerical expressions involving whole number exponents.</p> <p> 6.EE.A.2 Write, read and evaluate expressions in which letters stand for numbers. 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. <i>For example, view $(8 + 7)$ as both a single entity and a sum of two terms.</i></p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> Major Cluster</div> <div style="text-align: center;"> Supporting Cluster</div> <div style="text-align: center;"> Additional Cluster</div> <div style="text-align: center;"> Climate Change Opportunity</div> </div>		
<p>Progress Indicator: ♦ Tests ♦ Homework / Classwork ♦ Projects ♦ Formative assessments ♦ Summative assessments</p>		
Mathematical Practices:		
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reason of others. 4. Model with mathematics. 		

5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CLKS within Unit

Essential Questions:

Lesson 1.1: How can you write products of repeated factors as powers?

Lesson 1.2: Why is there a need for a standard order of operations?

Lesson 1.3: What is the difference between prime and composite numbers?

Lesson 1.4: What is the greatest common factor?

Lesson 1.5: What is the least common multiple?

Essential Understandings:

Lesson 1.1: Write and evaluate expressions involving exponents.

Lesson 1.2: Write and evaluate numerical expressions using the order of operations.

Lesson 1.3: Write a number as a product of prime factors and represent the product using exponents.

Lesson 1.4: Find the greatest common factor of two numbers.

Lesson 1.5: Find the least common multiple of two numbers.

Vocabulary:

- power
- base
- exponent
- perfect square
- numerical expression
- evaluate
- order of operations
- factor pair
- prime factorization
- factor tree
- Venn Diagram
- common factors
- greatest common factor
- common multiples
- least common multiple

**Encourage students to practice using the unit vocabulary as they talk and write about mathematics. Understanding vocabulary will aid their understanding of the concepts. When students encounter a new definition, encourage them to write in their Big Ideas Student Journals. They will revisit these definitions during the Chapter Review.*

Suggested Activity Descriptions:

- Performance Task TB pg. 1, Setting the Table
- Exploration Activities at the beginning of each section.
- Students analyze sample student answers to compare strategies and approaches for problem solving.
- Students engage in fluency practice resources.
- Students will use linking cubes (or color tiles) to represent the value of 3 raised to the first, second, third, and fourth powers.

Interdisciplinary Connections:

Science:

1. Big Ideas STEAM Video and corresponding questions on TB page 1.

Social Studies:

None in this unit.

Language Arts:

1. St. Ives nursery rhyme, TE pg. T-3.

Spot Light On: Rachel Carson

Social and Emotional Learning: Competencies	Social and Emotional Learning: Sub-Competencies
SEL Competencies: <ul style="list-style-type: none"> • Self-Awareness • Social Awareness • Self-Management • Relationship Skills • Responsible Decision-Making 	<ul style="list-style-type: none"> • Recognizing the importance of self-confidence in handling daily tasks and challenges. • Demonstrate an awareness of the expectations for social interactions in a variety of ways. • Demonstrate an understanding of the need for mutual respect when viewpoints differ. • Identify and apply ways to persevere through alternative methods to achieve goals. • Utilize positive communication and social skills to interact effectively with others. • Develop, implement, and model effective problem solving and critical thinking skills.

Grade 6 Mathematics
Big Ideas Unit 1: Numerical Expressions and Factors

Updated
 August 2024

Assessments (Formative) <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		Assessments (Summative) <i>To show evidence of meeting the standard/s, students will successfully complete:</i>	
Formative Assessments: • Teacher Observations • Exit Tickets • Quizzes • Self Assessments • Big Ideas Student Journals • Homework/Classwork • Teacher Created Assessments • Progress Monitoring Items • Formative Assessment Tips in Big Ideas Teacher Edition		Benchmarks & Summative Assessments: • Chapter/Unit Assessments • Standardized Tests • Project-based Assessments	
Differentiated Student Access to Content: Teaching and Learning <i>Resources/Materials</i>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
Big Ideas Student Journal, Dynamic Assessment System, iReady, Khan Academy, Illustrative Mathematics, Learn360, TeacherTube, BrainPOP, Freckle, LearnZillion, MobyMax, 60 minutes of weekly ST Math, Edulastic, Achieve the Core, Desmos	Reteach worksheets, Extra Practice worksheets, Math manipulatives, Scaffolding Instructions in each section of textbook, Tutorial Videos, Skills Review Handbook, Skills Trainer	Dictionary for native language, Video tutorial in native language, ELL Support in each section of Big Ideas Teacher’s Edition	ST Math Challenge Objectives, G&T tasks, Enrichment and Extension worksheets, Art of Problem Solving, Leveled assessments
Supplemental Resources			
Technology: • Chromebooks • Scientific/Graphing Calculators (upper grades only) • Online math manipulatives Other: • Google Classroom, Google Meets, Schoology, Interactive Workbooks • Illustrative Mathematics • insidemathematics.org • National Library of Virtual Manipulatives			

Differentiated Student Access to Content: Recommended <i>Strategies & Techniques</i>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core
Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics.	Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.), modify test content and/or format, allow students to retake test for additional credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break assignments into segments of shorter tasks.	Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric.	Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities, and connect student to related content.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	Disciplinary Concept(s): Critical Thinking and Problem Solving	
	Core Ideas:	An essential aspect of problem solving is being able to self reflect on why possible solutions for solving problems were or were not successful.
	Performance Expectation/s:	9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
	Career Readiness, Life Literacies, & Key Skills Practices	
	Act as a responsible and contributing community member and employee. Attend to financial well-being. Consider the environmental, social and economic impacts of decisions. Demonstrate creativity and innovation. Utilize critical thinking to make sense of problems and persevere in solving them.	

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	<p>Model integrity, ethical leadership and effective management. Plan education and career paths aligned to personal goals. Use technology to enhance productivity, increase collaboration and communicate effectively. Work productively in teams while using cultural/global competence.</p>
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New Jersey Legislative Statutes and Administrative Code (place an "X" before each law/statute if/when present within the curriculum map)									
	Amistad Law: <i>N.J.S.A. 18A 52:16A-88</i>		Holocaust Law: <i>N.J.S.A. 18A:35-28</i>	X	LGBT and Disabilities Law: <i>N.J.S.A. 18A:35-4.35</i>	X	Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>		Standards in Action: <i>Climate Change</i>