







**Grade 2 Mathematics**  
**Unit 11 Geometry and Fraction Concepts**

September  
2022

Trimester	Unit Title	Recommended Instructional Days
3	Geometry and Fraction Concepts	8 - 10 Days
<b>Domain</b>		
<p><b>Strand:</b></p> <p> 2.G.A.1- Reason with shapes and their attributes. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. ( Sizes are compared directly or visually, not compared by measuring).</p> <p> 2.G.A.2- Reason with shapes and their attributes. Partition circles and rectangles into two, three, and four equal shares, describe the shares using words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, and four fourths. Recognize the equal shares of identical wholes need not have the same shape.</p> <p> 2.G.A.3- Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.</p> <p>  <b>Major Cluster</b>                 <b>Supporting Cluster</b>                 <b>Additional Cluster</b> </p>		
<p><b>Progress Indicator:</b> ♦ Tests ♦ Homework / Classwork ♦ Projects ♦ Formative assessments ♦ Summative assessments</p>		
<b>Mathematical Practices:</b>		
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them.</li> <li>2. Reason abstractly and quantitatively.</li> <li>3. Construct viable arguments and critique the reason of others.</li> <li>4. Model with mathematics.</li> <li>5. Use appropriate tools strategically.</li> <li>6. Attend to precision.</li> <li>7. Look for and make use of structure.</li> </ol>		

8. Look for and express regularity in repeated reasoning.

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

**Essential Questions:**

- Lesson 11.1- What objects match three-dimensional shapes?  
Lesson 11.2- How would you describe three-dimensional shapes according to the number of faces, edges, and vertices?  
Lesson 11.3- How can you build a rectangular prism?  
Lesson 11.4- What shapes can you name just by knowing the numbers of sides and vertices?  
Lesson 11.5- How do you find and count angles in two-dimensional shapes?  
Lesson 11.6- How do you use the number of sides and angles to sort two-dimensional shapes?  
Lesson 11.7- How do you find the total number of same-size squares that will cover a rectangle?  
Lesson 11.8- What are halves, thirds, and fourths of a whole?  
Lesson 11.9- How do you know if a shape shows halves, thirds, or fourths?  
Lesson 11.10- How do you find a half, a third of, or a fourth of a whole?  
Lesson 11.11- How can drawing a diagram help when solving problems about equal shares?

**Essential Understandings:**

- Lesson 11.1- Identify three-dimensional shapes.  
Lesson 11.2- Identify and describe three-dimensional shapes according to the number of faces, edges, and vertices.  
Lesson 11.3- Build three-dimensional shapes using cubes and other objects.  
Lesson 11.4- Name 3-, 4-, 5-, and 6-sided shapes according to the number of sides and vertices.  
Lesson 11.5- Identify angles in two-dimensional shapes.  
Lesson 11.6- Sort two-dimensional shapes according to their attributes.  
Lesson 11.7- Partition rectangles into equal-size squares and find the total number of these squares.  
Lesson 11.8- Identify and name equal parts of circles and rectangles as halves, thirds, or fourths.  
Lesson 11.9- Partition shapes to show halves, thirds, or fourths.  
Lesson 11.10- Identify and describe one equal party as a half of, a third of, or a fourth of a whole.  
Lesson 11.11- Solve problems involving wholes divided into equal shares by using the strategy to draw a diagram.

**Vocabulary**

- angle
- cone
- cube
- cylinder
- edge

- face
- fourths
- halves
- hexagon
- pentagon
- quadrilateral
- rectangular prism
- side
- thirds
- vertex

**Suggested Activity Description:**

Personal Math Trainer, Tutorial Videos, Vocabulary Game, Reading Grab and Go Activity, Explore and Guided/Independent Practice related to the NJSLS, Evaluation Online Activity, Essential Question Discussion and Check –In, Basic Skills Review, Manipulative Activity, Reteach Activity, Reading Strategies Activity, Success for English Learners Activity, Performance Task

**Interdisciplinary Connections:**

**STEM Activity:** In Chapter 11, children extend their understanding of geometry and fraction concepts, by understanding fractions as distances. These same topics are often used in the development of various science concepts and process skills, such as finding the strength of different types of magnets. Help children make the connection between math and science through S.T.E.M. activities and activity worksheets found at Think Central.

In Chapter 11, children connect math and science with the S.T.E.M. Activity Attract Attention and the accompanying worksheets (pages 111 and 112). Through this S.T.E.M. Activity, children will connect the GO Math! Chapter 11 concepts and skills with various types of magnets, including finding the strength of a magnet. It is recommended that this S.T.E.M. Activity will be used after Lesson 11.11.

**Science:**

1. Talk with children about where they see angles in nature. • Have children look in their science books or other resources. Ask them to find pictures of natural objects that have angles. After discussing these objects in nature, have children draw a picture of one of them, showing that its parts have angles.

**Social Studies:**

1. Tell children that countries have flags that have different symbols. • Show Children Pictures Of Flag From Different Countries. Explain that some flags from different countries have different shapes on them. • Have children point to the shapes and angles they see on each flag. • You may want to have children name the different shapes on the flags and tell about the number of sides and angles on each shape.

<p><b>Language Arts:</b></p> <p>1. Vocabulary Builder pg. 703- <b>Visualize It</b> Have children draw pictures to give examples of equal parts in the green box. Explain that they can be drawings of shapes with equal parts. In the blue box children should draw shapes that do not have equal parts. <b>Understand Vocabulary</b> To ensure children understand the Review Word shape, point out objects in the classroom that are shaped like a rectangle, such as a sheet of paper.</p> <p>2. building a Mini-Park - (From the Grab and Go Differentiated Center Kit)</p> <p>3. Square Fair - (From the Grab and Go Differentiated Center Kit)</p> <p><b>Spot Light On:</b> Teach appropriate language around asking questions about other students' cultures.</p>	
<p style="text-align: center;"><b>Social and Emotional Learning:</b> <i>Competencies</i></p>	<p style="text-align: center;"><b>Social and Emotional Learning:</b> <i>Sub-Competencies</i></p>
<p>SEL Competencies:</p> <ul style="list-style-type: none"> <li>• Self- awareness</li> <li>• Social Awareness</li> <li>• Self- Management</li> <li>• Relationship Skills</li> <li>• Responsible Decision-Making</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizing the importance of self-confidence in handling daily tasks and challenges.</li> <li>• Demonstrate an awareness of the expectations for social interactions in a variety of ways.</li> <li>• Demonstrate an understanding of the need for mutual respect when viewpoints differ.</li> <li>• Identify and apply ways to persevere through alternative methods to achieve goals.</li> <li>• Utilize positive communication and social skills to interact effectively with others.</li> <li>• Develop, implement, and model effective problem solving and critical thinking skills.</li> </ul>
<p style="text-align: center;"><b>Assessments (Formative)</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i></p>	<p style="text-align: center;"><b>Assessments (Summative)</b> <i>To show evidence of meeting the standard/s, students will successfully complete:</i></p>
<p><b>Formative Assessments:</b></p> <p>• Teacher Observations • Exit Tickets • Quizzes • Self Assessments • Math Journals • Homework/Classwork • Teacher created assessments</p>	<p><b>Benchmarks &amp; Summative Assessments:</b></p> <p>Chapter/Unit Assessments • Standardized Tests • District Assessments • Project-based Assessments</p>

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Differentiated Student Access to Content: Teaching and Learning <u>Resources/Materials</u>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
Go Math Workbook, IXL, ST MATH 60 minutes a week, Personal Math Trainer, Math on the Spot Videos, My HRW, Khan Academy, Illustrative Mathematics, Learn360, TeacherTube, BrainPOP, Freckle, LearnZillion, MobyMax, ST Math, Edulastic, Achieve the Core, Desmos,	Reteaching worksheets, Skill building workbook, Math manipulatives, Leveled practice worksheets	Dictionary for native language, Video tutorial in native language, Success for English Learners worksheets, Leveled Strategies for English Learners, Linguistic Support	ST Math special projects, G& T tasks, Enrichment worksheets, Art of Problem Solving, Leveled assessments
Supplemental Resources			
<b>Technology:</b> • Chromebooks • Online math manipulatives <b>Other:</b> • Google Classroom, Google Meets, Schoology, Interactive Workbooks • Illustrative Mathematics • insidemathematics.org • National Library of Virtual Manipulatives			
Differentiated Student Access to Content: Recommended <u>Strategies &amp; Techniques</u>			
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, repeat	Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling,	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	Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose

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	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.	dictionary, and modified assessment and/or rubric.	interest-based extension activities, and connect student to related
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NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	Disciplinary Concept(s): Critical Thinking and Problem-Solving	
	Core Ideas:	Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem
	Performance Expectation/s:	9.4.2.CT.3 Use a variety of types of thinking to solve problems
	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. 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.	

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>	LGBT and Disabilities Law: <i>N.J.S.A. 18A:35-4.35</i>	<b>X</b>	Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>	Standards in Action: <i>Climate Change</i>
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