

GRADE 1 UNIT 5 – REASONS WITH SHAPES AND THEIR ATTRIBUTES

<p>Established Goals: Standards</p> <p><u>Geometry</u></p> <p>1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.</p> <p>1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p> <p><u>Measurement & Data</u></p> <p>1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p> <p><u>Number & Base Ten</u></p> <p>1.NBT.4 Add within 100, including adding a two-digit and a one-digit number, and adding a two-digit number and a multiple of 10; using concrete models, or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction; and relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p> <p><u>Operations & Algebraic Thinking</u></p> <p>1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>1. OA.6 Add and subtract within 20, demonstrating fluency</p>	Transfer	
	<p><i>Students will be able to:</i></p> <p>Describe two and three dimensional objects with or without curved surfaces can be described, classified and analyzed by their attributes.</p> <p>A region can be divided into equal-sized parts in different ways. Equal sized parts of a region can have the same area but not the same shape</p> <p>Problems can be shown using a picture, model, or diagram.</p>	
	Meaning	
	ENDURING UNDERSTANDING	ESSENTIAL QUESTIONS
	<p>Many everyday objects in the real world are plane shapes</p> <p>Plane shapes have many properties that make them different</p> <p>Plane shapes can be described by their sides and vertices</p> <p>Plane shapes can be combined to make new plane shapes</p> <p>Many everyday objects can be compared to a plane and solid shapes</p> <p>Many solid figures are made up of flat surfaces and vertices</p> <p>Attributes can be used to sort plane and solid shapes</p> <p>Problems can be solved using organized lists, charts or tables</p> <p>Divide shapes into equal parts</p> <p>Describe equal parts of a whole</p> <p>Identify halves and quarters</p> <p>Solve problems by drawing pictures</p> <p>Determine when regrouping is needed in Add/Sub of 2 Digit Numbers</p>	<p>What is the difference between a plane shape and a solid shape?</p> <p>What plane shapes can be combined to make new shapes?</p> <p>What solid shapes can be combined to make new solid shapes?</p> <p>Can I find shapes in the real world and name them?</p> <p>How can I tell if I have divided a shape into equal halves? Quarters?</p> <p>How will I know when to regroup in a 2 Digit addition or subtraction problem.</p>
	Acquisition	
KNOWLEDGE	SKILLS	
<p><i>Students will know how to...</i></p> <p>Analyze shapes and solids in the real world</p>	<p><i>Students will be skilled at...</i></p> <p>Identify and name plane geometric figures.</p>	

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<p>for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p>	<p>Connect Geometric shapes/solids in the real world to geometric shapes/solids</p> <p>Sort Shapes according to their attributes</p> <p>Combine plane shapes to make new shapes</p> <p>Combine solids to make a new solid figure</p> <p>Connect new shapes to real world objects</p> <p>Create Charts or Tables to organize Data</p> <p>Describe if a shape is divided equally</p> <p>Divide shapes into halves and quarters</p> <p>Compare areas of divided shapes</p> <p>Explain if a shape is or is not divided equally</p> <p>Analyze a 2 Digit Add/Sub Equation and determine if Regrouping is needed.</p>	<p>Draw plane shapes</p> <p>Identify and name solid figures.</p> <p>Find sides and vertices on plane and solid figures</p> <p>Sort plane/solid figures according to their attributes</p> <p>Count sides and vertices of plane/solid figures</p> <p>Divide Plane shapes into equal parts</p> <p>Know the value of half and quarter in reference to dividing plane shapes</p> <p>Add and Subtract with regrouping (2 Digit)</p>
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Vocabulary	Instruction and Pacing (suggested order to teach)	
Plane Shapes, Solid Figures, Square, Rectangle, Triangle, Circle, Sides, Corners, Cone, Corner, Cylinder, Cube, Sphere, Rectangular Prism, Trapezoid, Hexagon, Equal Parts, Halves, Fourths, Quarters, Half of, Fourth of, two of, four of	Geometric Shapes & Attributes	2 ½ Weeks
	Fractional Parts of Shapes	1 Week
	Data Analysis	1 ½ Weeks
	Addition & Subtraction of 2 Digit Number w/Regrouping	1 Week
	Benchmark Testing & Reteaching	2 Weeks
Common Misconceptions	Proper Conceptions	
Students have difficulty visualizing all sides of solid	Using objects the everyday world can help us see attributes of solid figures	
A sphere has one flat surface	A Sphere has one curved surface	
Different shaped rectangles are altogether different shapes	Shapes can be different sizes but the same shape	
Students lose track when counting sides	Mark or track the sides of objects when counting sides	
Students have difficulty dividing shapes into equal parts	Divide shapes in half first, then see if it can be divided again equally.	
All halves and fourths are the same size	A half is equal to two equal parts and fourths are four equal parts divided	
Student regroup correctly but make mistakes with basic add/sub facts	Continually practicing basic facts can help with add/sub with regrouping	
Students have difficulty seeing ten objects as one group of ten	Our number system organizes numbers in groups of ten	
Students add in the tens column before the ones column	Steps for add/sub help us to add and subtract correctly	
Data – students incorrectly use tally marks	Grouping tallies by 5's helps us to keep track of the number correctly	
Students have difficulty determining which item is the most on a Bar/Picture Graph	The row that is the longest or most pictures has the most	
Resources		

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Common Core Standards, New Jersey Model Curriculum,

Envisions Math Program Suggested Topics

Topic 15 Geometry

Topic 16 Fractions of Shapes

Topic 14 Using Data To Answer Questions

MANIPULATIVES AND GRAPHIC ORGANIZERS – Pattern Blocks, Solid Figures, Unifix Cubes, Templates for Bar Graphs and Tally Charts

<http://illuminations.nctm.org>, <https://www.illustrativemathematics.org>, <https://grade1commoncoremath.wikispaces.hcps.org>

Recommendations for ELL Learners

Envisions Spanish Resources & Printable Resources

<http://www.njctl.org/courses/math/1st-grade/geometry/>

<http://www.njctl.org/courses/math/1st-grade/data/>

<http://www.state.nj.us/education/modelcurriculum/math/ellscaffolding/1u5.pdf>

Differentiation and Accommodations

Provide graphic organizers

Provide additional examples and opportunities for additional problems for repetition

Provide tutoring opportunities

Provide retesting opportunities after remediation (up to teacher and district discretion)

Teach for mastery not test

Teaching concepts in different modalities

Adjust pace and homework assignments

ELL Learners

- Assess/review prerequisite skills.
- Bring in real life examples of two and three dimensional shapes. Allow students to explore shapes and gain experience to match the math vocabulary (vertices, faces, etc.). Students should have time to build with the objects to make composite shapes.
- Give students place value blocks and place value mats to model addition and subtraction problems to determine if regrouping is necessary.
- When solving word problems (ie Benchmark Task for SLO 4 Addition and Subtraction across 10), rather than solely reading, give students a printed copy so they can read along and highlight/circle numbers. Provide room for students to write number sentences and draw pictures on the same document.
- Make illustrated word wall showing graphing language (fewer, least, more, most, favorite, tallies, bar graph, picture graph).

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- Allow students to use manipulatives (base 10 blocks, etc.), hundreds charts, and other available tools to solve word problems.
- Utilize Spanish version of Envisions/digital Interactive Path and printable resources

21st Century Skills	Critical Thinking, Creative Thinking, Collaborating, Communicating, and Technology Literacy
Instructional Strategies	<p>Fairfield Township School recognizes the importance of the varying methodologies that may be successfully employed by teachers within the classroom and, as a result, identifies a wide variety of possible instructional strategies that may be used effectively to support student achievement. These may include, but not be limited to, strategies that fall into categories identified by the Framework for Teaching by Charlotte Danielson:</p> <ul style="list-style-type: none"> • Communicating with students • Using questioning and discussion techniques • Engaging students in learning • Using assessment in instruction • Demonstrating Flexibility and Responsiveness
Interdisciplinary Connections	ELA, Science, and Technology

Performance Task

Create a Geo-Bot

- Students will cut out several large and small plane shapes squares ,rectangles, triangles ,trapezoids, circles etc., (or they can be pre-cut).
- Students will create a Geo-Bot (Geometric Robot) out of all of the shapes.
- Students may combine and connect the plane shapes to create all of the parts of the Geo-bot.
- Students will name their Geo-bot then make a list and chart of all of the shapes used or combined to create their Geo-bot.
- Students can present their Geo-bots to the class (optional)

Geo-bot Name _____ Student Name _____

Body Part	Geometric Shape or Shapes Used
Head	
Body	
Arms	
Hands	
Legs	

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Feet	

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Geo-bots will vary

3 – Geo-bot body is complete with all parts, all body parts are named with correct geometric shape. Chart is filled out correctly.

2- Geo-bot body is complete with all parts, some body parts are named with correct geometric shape (1 mistake) . Some of the chart is filled out correctly (1 Mistake)

1 – Geo-bot is missing body parts. There are 2 or more mistakes with naming and charting the shapes.

0 – No Response

ASSESSMENTS

Suggested Formative Assessment

Problem of the Day

Lesson Quizzes

Exit Ticket

Anecdotal Records (Topic Observation Checklist)

Suggested Summative Assessment - Grade Level developed Unit/Envisions Topic Tests/ Ed Connect Tests/ State Unit Benchmark/Performance Task