

NJDOE MODEL CURRICULUM

CONTENT AREA: Mathematics		GRADE: 2	UNIT: # 5	UNIT NAME: Represent Data and Recognize Shapes and their Attributes	
#	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS			
1	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	2.NBT.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.		
2	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (Sizes are compared visually or directly, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	2.G.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (Sizes are compared visually or directly, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.		
3	Use tools of measurement to measure lengths of several objects to the nearest whole unit and represent the data on a line plot with appropriate whole number units on the horizontal scale.	2.MD.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.		
4	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph.	2.MD.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph.		
5	Partition a rectangle into rows and columns of same-size squares and count to find the total number.	2.G.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.		
6	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.	2.G.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.		
7	Fluently add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers.	2.OA.2	Fluently add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers.		

8	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	2.NBT.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
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Selected Opportunities for Connection to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
SLO #2 Analyze given information and attributes about unknown shapes in order to draw the specified shape.
2. **Reason abstractly and quantitatively.**
SLO #8 know and flexibly use the properties of operations in order to understand the relationship between addition and subtraction.
3. **Construct viable arguments and critique the reasoning of others.**
SLO #4 Construct viable and logic arguments based on a picture graph and a bar graph.
4. **Model with mathematics.**
SLO #4 Use tools such as diagrams and graphs in order to better identify, create, and analyze the components of a dataset.
5. **Use appropriate tools strategically.**
SLO #5 Use appropriate and available tools to partition a rectangle into rows and columns of the same size in order to count the total.
6. **Attend to precision.**
SLO #6 Use clear and precise definitions to discuss the division of circles and rectangles into equal shares (for example: half, third, or half of).
7. **Look for and make use of structure.**
SLO #8 Look for and discern a pattern or relationship based on place value concepts or properties of operations in the context of addition or subtraction.
8. Look for and express regularity in repeated reasoning.

Greater Brunswick Charter School Curriculum

Grade level: 2		Subject: Math			Unit #: 5		
Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources (in addition to MyMath)
					Whole Group	Small Group / Stations	
1 Chapter 9	Take a Survey	4	Take a survey and organize data using tally marks	<i>How can you organize data using tally marks?</i>	<i>Think-Pair-Share Activity TE.p.533</i>	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready • <i>Reteach Master and Enrich Master</i> 	MyMath p. 529-534
2	Make Picture Graphs	4	Use data to create picture graphs	<i>How can you use data to create a picture graph?</i>	<p><i>Suggestion: Read trade book, such as "10 for Dinner" by: Jo Ellen Bogart, to prepare students for the lesson</i></p> <p>Formative Assessment: <i>Exit Ticket: Have students write a reflection on today's lesson. Have them write how picture graphs are useful.</i></p>	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 535-540 MyMath Game: Making a Graph with Clara Cat Pictograph Activity Sheets You-Tube Picture Graphs
3	Analyze Picture Graphs	4	Analyze data on picture Graphs	<i>How do you get information from a picture graph?</i>	Formative Assessment: <i>3-2-1- Strategy: TE 543</i>	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p.541-546 Starfish Theater: Picture Graphs Pictograph Activity Sheets
4	Checking Progress		Review Lessons 1-3		Check My Progress	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p.547-548 Assessment Masters p. 217

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5	Make Bar Graphs	4	Make bar graphs to show data	<p><i>How can you create a bar graph to show data?</i></p> <p><i>How are bar graphs different from picture graphs?</i></p>		<ul style="list-style-type: none"> • Lesson • Guided Practice <ul style="list-style-type: none"> - Discuss HOT PROBLEM p.552 • Ind. Practice • i-Ready 	MyMath p. 549-554 IXL - Bar Graphs
6	Analyze Bar Graphs	4	Draw conclusions and answer questions based on bar graphs	<p><i>How do you read a bar graph?</i></p>	<p>Suggestion Intro Activity: Read a trade book such as: <i>Tiger Math: Learning to Graph from Baby Tiger</i> by Ann Whithead, to prepare students for the lesson</p>	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 555-560 Reteach Master p. 80 Enrich Master p. 72 Fact Dash Game
7	Problem Solving: Make a Table	4	Make a table to solve problems	<p><i>How can I record and analyze data?</i></p>		<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 561-566 Lesson Animation: PSS: Make a Table 2nd Grade Math Salamander - Bar Graphs
8	Make Line Plots	3	Use data to create line plots	<p><i>How can you use data to create line plots?</i></p>	Suggestion: Model the Math TE. p. 567B	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 567-572 YouTube - Line Plots
9	Analyze Line Plots	3	Analyze data on line plots	<p><i>How do you read line plots?</i></p>	Suggestion: Model the Math TE. P. 573B Exit Ticket: Have students write how line plots are the same and different than bar or picture graphs.	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 573-578

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10	Chapter 9 Review					<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 579-582
11	Chapter 9 Assessment					<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	
12 Chapter 12	Two-Dimensional Shapes	2	Identify two-dimensional geometric shapes	<i>What words can you use to describe two-dimensional shapes?</i>		<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 739-744 YouTube - 2 Dimensional Shapes IXL - 2 Dimensional Shapes Online Game - Identify 2 Dimensional Shapes
14	Sides and Angles	2	Recognizing attributes (sides and angles) of two-dimensional shapes	<i>How are a square and a hexagon alike? And different?</i>		<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 745-750 Lesson Animation: 2-Dimensional Shapes
15	Problem Solving: Draw a Diagram	2	Use the draw a diagram strategy to solve problems	<i>How can you describe a quadrilateral?</i>	<i>Suggestion:</i> Read a trade book such as: <i>The greedy Triangle</i> by: Marilyn Burns, to prepare students for the lesson.	<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p.751-756 Lesson Animation: PSS: Draw a Picture <i>Suggestion: Formative Assessment: Quick Draw TE p. 756</i>
16	Checking Progress	2	Review Concepts from Lessons 1-3			<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 757-758

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17	Three-Dimensional Shapes	2	Identify three-dimensional geometric shapes	<i>How can you identify three-dimensional shapes?</i>		<ul style="list-style-type: none"> Lesson Guided Practice Ind. Practice i-Ready 	MyMath p. 759-764 3-D Shapes Online Activity IXL - 3-D Shapes Suggestion: **Membership Needed: 19.95 per year https://www.superteacherworksheets.com/become-a-member.html Lesson Animation: 3-D Figures
18	Faces, Edges, and Vertices	2	Describe the faces, edges, and vertices of 3-D shapes	<i>What attributes are used to identify 3-D shapes?</i>	Formative Assessment: Think-Pair-Share TE p. 770	<ul style="list-style-type: none"> Lesson Guided Practice Ind. Practice i-Ready 	MyMath p. 765-770 IXL - Faces, Edges, Vertices Mathopolis Online
19	Relate Shapes and Solids	2	Identify 2-D shapes and solid shapes	<i>What real-world objects can you use to trace a circle?</i> <i>What is the relationship between a square and a cube?</i>		<ul style="list-style-type: none"> Lesson Guided Practice Ind. Practice i-Ready 	MyMath p. 771-776 Lesson Animation: 2-D & 3-D Figures Activity Sheet for Kids - Shapes, Faces, Edges, Vertices
20	Halves, Thirds, Fourths	6	Partition 2-D shapes into two, three, and four equal shares	<i>Explain how you can divide a pie so that four people each get an equal part?</i>	Formative Assessment: 3-2-1 Strategy TE p. 780	<ul style="list-style-type: none"> Lesson Guided Practice Ind. Practice i-Ready 	MyMath p. 777-782 IXL - Halves, Thirds, Fourths Khan Academy - Demonstration Lesson

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Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources (in addition to MyMath)																																			
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21	Area	5	Determine the area of a rectangle	<i>How do you partition rectangles into equal sized squares?</i>		<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 783-788 Lesson Animation: Explore: Equal Parts Enrich p.101 Reteach p. 113 Superteacher Sheet - Area - Rectangle Activity Sheet - Area YouTube - Area of Rectangle																																			
22	Review					<ul style="list-style-type: none"> • Lesson • Guided Practice • Ind. Practice • i-Ready 	MyMath p. 789-792																																			
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<u>Word Wall Candidates</u> <table border="0" style="width: 100%;"> <tr> <td>Data</td> <td>Tally marks</td> <td>Picture graph</td> <td>Symbol</td> <td>Line plot</td> </tr> <tr> <td>Two-dimensional shape</td> <td>Parallelogram</td> <td>Trapezoid</td> <td>Pentagon</td> <td>Hexagon</td> </tr> <tr> <td>Survey</td> <td>Side</td> <td>Angle</td> <td>Quadrilateral</td> <td>Three-dimensional shape</td> </tr> <tr> <td>Cube</td> <td>Sphere</td> <td>Cone</td> <td>Cylinder</td> <td>Pyramid</td> </tr> <tr> <td>Rectangular prism</td> <td>Face</td> <td>Edge</td> <td>Vertex</td> <td>Halves</td> </tr> <tr> <td>Thirds</td> <td>Fourths</td> <td>Partition</td> <td>Half of</td> <td>Third of</td> </tr> <tr> <td>Fourth of</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								Data	Tally marks	Picture graph	Symbol	Line plot	Two-dimensional shape	Parallelogram	Trapezoid	Pentagon	Hexagon	Survey	Side	Angle	Quadrilateral	Three-dimensional shape	Cube	Sphere	Cone	Cylinder	Pyramid	Rectangular prism	Face	Edge	Vertex	Halves	Thirds	Fourths	Partition	Half of	Third of	Fourth of				
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Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources (in addition to MyMath)
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<u>Authentic Application</u>							
Your Goal:		Build It, Graph It!					
Your Role:		Create a variety of informational displays utilizing survey, tally charts, pictographs, or bar graphs.					
Your Audience:		Your classmates					
The Situation:		<ul style="list-style-type: none">• Collect and analyze data that has been gathered using a survey and tally chart.• Generate, create and analyze bar graphs.• Generate, create and analyze pictographs.• Students will work individually and in teams to create a variety of informational displays.					
The Final Product:		You must draw, label, and create tally charts, and/or pictographs, and/or bar graphs: <ul style="list-style-type: none">• Solve, illustrate, and explain their work					
		- Students will survey 10 other students on various things such as: Favorite sport, favorite ice cream flavor, favorite school subject and create a tally chart.					
		- Utilizing and analyzing those results the student will create either a pictograph or bar graph to display their results.					
		- Students will write two statements about their pictograph or bar graph using math terms					
Success Criteria:		To be successful, you must provide, at the end of the project: <ul style="list-style-type: none">• Illustration, Number Sentences, and detailed explanation of work.					