NJDOE MODEL CURRICULUM

CONTENT AREA: Mathematics	GRADE: 5	UNIT: # 5	UNIT NAME: Shape and Coordinate Geometry

	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS	
1	**Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition, subtraction, multiplication, and division.**	**5.NBT.7**	Add, *subtract*, multiply, and divide decimals to hundredths, 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 and explain the reasoning used … (**repeated for fluency)**.
2	Use a pair of perpendicular number lines (**axes**) to define a coordinate system, with the intersection of the lines (**origin**) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers (**coordinates**).	5.G.1	Use a pair of *perpendicular* number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
3	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	5.G.2	*Represent* real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
4	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence.* Explain informally why this is so.	5.OA.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence.* Explain informally why this is so.
5	Identify attributes of a two-dimensional shape based on attributes of the groups and categories in which the shape belongs.	5.G.3	*Understand* that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

STUDENT LEARNING OBJECTIVES		CORRESPONDING CCSS	
6	Classify two- dimensional figures in a hierarchy based on properties.	5.G.4	Classify two-dimensional figures in a hierarchy based on properties.
7	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	5.MD.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*
8	**Fluently multiply multi-digit whole numbers using the standard algorithm.**	5.NBT.5	**Fluently multiply multi-digit whole numbers using the standard algorithm.**

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks). ***Bold type indicates grade level fluency requirements.*** *(Identified by PARCC Model Content Frameworks).*

Selected Opportunities for Connection to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
   SLO #1 Use concrete objects or pictures to add, subtract, multiply, and divide decimals to the hundredths place.
   SLO #4 Analyze givens, constraints, and relationships when generating numeric patterns based on two given rules.
   SLO #7 Draw diagrams of important features, graph points from a dataset in order to solve problems involving the information in the graphs and diagrams.
2. **Reason abstractly and quantitatively.**
   SLO #1 Know and flexibly apply the properties of operations to add, subtract, multiply, and divide decimals.
   SLO #4 Understand and make sense of quantities when generating number patterns based on two given rules.
   SLO #5 Know and flexibly use different properties of objects in order to identify and categorize attributes of two-dimensional shapes.
   SLO #6 Know and flexibly use different properties of objects in order to classify two-dimensional shapes based on properties.
   SLO #7 Know and flexibly use different properties of operations in order to solve problems involving fractions of a unit.
3. **Construct viable arguments and critique the reasoning of others.**
   SLO #4 Make conjectures, and build a logical progression of statements about number patterns given two predetermined rules.
   SLO #5 Understand assumptions and definitions in order to identify and categorize two-dimensional shapes based on their attributes.
   SLO #6 Understand assumptions and definitions in order to classify two-dimensional figures based on their properties.
   SLO #7 Reason inductively about the graph data, and be able to make plausible arguments based on the line plots.
4. **Model with mathematics.**
   SLO #3 Apply previously learned concepts to solve real world problems involving graphing points on the coordinate plane.
   SLO #4 Using tools map the relationship between number patterns based on the two given rules.
   SLO #7 Apply previously learned concepts about fractions and line plots to solve problems that involve both.
5. **Use appropriate tools strategically.**
   SLO #1 Consider and use available tools, such as models and drawings, when adding, subtracting, multiplying, or dividing decimals.
6. **Attend to precision.**
   SLO #2 Specify units of measurement and label axes to define a coordinate system.
   SLO #3 Specify units of measurement and label axes when working within a coordinate plane.
   SLO #4 Specify units of measurement and label axes when graphing ordered pairs on a coordinate plane.
   SLO #7 Specify units of measurement and label axes when making line plots to display a dataset.
7. **Look for and make use of structure.**
   SLO #1 Look for and discern patterns when adding, subtracting, multiplying, or dividing decimals.
   SLO #4 Look for and discern patterns given two mathematical rules.
   SLO #5 Look for and discern a structure based on attributes of two-dimensional shapes.
   SLO #6 Look for and discern a structure based on properties of two dimensional shapes.
   SLO #8 Look for and discern patterns when using the standard algorithm to multiply multi-digit whole numbers.
8. Look for and express regularity in repeated reasoning.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Greater Brunswick Charter School Curriculum

Grade level: 5 **Subject:** Math **Unit #:** 4

Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources
					Whole Group	Small Group / Stations	
1	Ordered Pairs	2	To plot points on a coordinate plane	*What do I recall from earlier in the year?*	*This is a review of prior content using the same pages for familiarity. Just remember to emphasize which are x and y.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 7-8 p.525-530
2	Graphing patterns	2	To use a coordinate plane to plot points and see a pattern	*How does seeing something make it easier for me to understand it?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 7-9 p.531-536
3	Graphing on a coordinate plane		To plot and read points on a coordinate plane	*Have I mastered this after a second lap on it?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath p.538-539, #15-20, 24-26
4	Classifying triangles	5, 6	To classify triangles based on attributes	*What attributes help me know the category of a triangle?*	*This is a review of prior content using the same pages for familiarity. Just remember to emphasize the point of the two SLOs.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 12-3 p.915-920
5	Classifying quadrilaterals	5, 6	To classify quadrilaterals based on attributes	*What attributes help me know the category of a quadrilateral?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 12-5 p.929-934
6	Round decimals	1	To round decimals to an identified place value	*Why is place value so important to rounding?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-1 p.303-308
7	Estimate answers for adding and subtracting decimals	1	To round addends and subtrahends prior to mental math and estimating.	*How does rounding a decimal numeral make it easier to estimate the answer?*	*Make sure they are required to estimate and not just add for the answer.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-2 p.309-314

Grade level: 5				Subject: Math			Unit #: 4
Day	**Topic**	**SLO**	**Learning Objectives**	**Essential Questions**	**Suggested Student Activities**		**Possible Resources**
					Whole Group	**Small Group / Stations**	
8	Problem solving with estimating decimals	1	To use decimal estimation in real world applications.	*How can I use decimal estimation in the real world?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-3 p.315-320
	Ordered pairs, classifying geometry, estimating whole numbers	1, 5, 6	Assessment		*These should be review topics without the need for an additional day of review before an assessment.*	• Review • Assessment	
9	Adding decimals with hands on and visual examples	1	To add like terms (like place values) when adding decimals	*Why is it important to keep the place values together?*	*The point of the blocks and arrays is to visually show the importance of lining up decimal points to ensure tenths are added to tenths, etc. Don't skip over it because it may be inconvenient.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-4 p.323-329
10	Adding decimals with visual examples	1	To add like terms (like place values) when adding decimals	*Why is it important to keep the place values together?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-5 p.329-334
11	Adding decimals	1	To add decimals	*What is the one thing different between adding decimals and adding whole numbers?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-6 p.335-340
12	Addition properties	1	To use addition properties to reorder numbers for easier adding.	*How can making 10s make it easier to add in my head?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-7 p.341-346
13	Subtract decimals	1	To subtract decimals	*What is the one thing different between subtracting decimals and subtracting whole numbers?*	*Skip the blocks and models this time around unless your students are troubled with place value*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 5-8 p.361-366
14	Adding and subtracting decimals	1	To add and subtract decimal numerals	*Can I add and subtract decimals fluently?*		• Independent practice • Intervention/Enrichment • i-Ready	MyMath p.367-370

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Day	**Topic**	**SLO**	**Learning Objectives**	**Essential Questions**	**Suggested Student Activities**		**Possible Resources**
					Whole Group	**Small Group / Stations**	
15	Adding and subtracting decimals	1	Assessment			• Review • Assessment	
16	Multiplying and dividing decimals	1	To determine readiness for X, ÷ decimal numerals	*Can I fluently add multiply and divide whole numbers?*	*To power of 10 content on p.377 is worth spending some time to solidify.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath p.373-377
17	Estimating products of decimals	1	To round numerals to estimate a product.	*How does rounding help my multiply in my head?*	*These are rounding problems so there should not be any counting of decimal places for the answer.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-1 p.379-384
18	Visually multiplying decimals	1	To multiply decimals using visual help	*How can I make a number like 0,4 make sense to me to multiply?*	*This is about seeing the multiplication of a number less than one. Everything else is just mechanics.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-2 p.384-390
19	Multiplying decimal with whole numbers	1	To multiply a decimal by a whole number using the standard algorithm	*How do I multiply decimals to get the number my calculator gives me?*	*It's easy to make up additional problems for practice. Feel free to do it.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-3 p.391-396
20	Multiplying two decimal with visuals	1	To multiply two decimals	*How does the decimal point act when I have two decimal numerals?*	*Be sure to do a visual example using a grid. The book uses 0.4 x 2.4. I suggest use 0.2 x 0.3. There will be less shading and you still show 100 blocks. This is important to get from multiplying tenth to an answer with hundredths.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-4 p. 397-402
21	Multiplying decimals	1, 8	To multiply two decimals with the reigns off.	*How can I rely on my decimal point placement to always be correct?*	*Practice here doubles for SLO 8. Feel free to make up plenty. You're welcomed to use lattice multiplication, if you like.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-5 p.403-408

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Day	**Topic**	**SLO**	**Learning Objectives**	**Essential Questions**	**Suggested Student Activities**		**Possible Resources**
					Whole Group	**Small Group / Stations**	
22	Multiplying by powers of 10	1	• To multiply by powers of 10 using mental math • To multiply decimals in real world applications	*How can I use my knowledge of place value to make this multiplication easier?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-6, 6-7 p.411-422
23	Multiplication properties	1	To use the correct property of multiplication to make the problem easier to do.	*How do I tell which property to use to make it easier?*	*The text gives problems for recognizing the property they used. Encourage using more problems that require them to select the property to make it easier to do for them, like getting them to multiply by a 10 or breaking a large number into smaller numbers with a power of 10.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-8 p.423-428
24	Multiplying decimals	1, 8	To multiply two decimals			• Independent practice • Intervention/Enrichment • i-Ready	MyMath p.409-410, 435 #1-7
25	Multiplying decimals	1, 8	Assessment			• Review • Assessment	MyMath p.
26	Estimating quotients	1	To round decimals to estimate the answer to a division problem	*How does rounding help my divide in my head?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-9 p.429-434
27	Dividing decimals visually	1	To derive the quotient by visual means	*How does seeing the division make it easier to do the division?*		• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-10 p.437-442

Grade level: 5 **Subject: Math** **Unit #: 4**

Day	Topic	SLO	Learning Objectives	Essential Questions	Suggested Student Activities		Possible Resources
					Whole Group	Small Group / Stations	
28	Dividing decimals by whole numbers	1	To divide decimals by a whole number using the standard algorithm and visually	*How does the visual division translate to the algorithm?*	*Suggest you have students do it both ways for some smaller, simpler problems until they get the same answer both ways.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-11 p.443-448
29	Dividing decimals	1	To divide decimals using the standard algorithm	*How do I control the decimal point when I divide?*	*You're welcomed to use other division methods if you want.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-13 p.455-460
30	Dividing decimals by a power of 10	1	To divide decimals mentally by a power of 10	*How is this just like, but just the opposite of multiplying by a power of 10?*	*Make the case it's the same operation, just the inverse – backwards.*	• Lesson/Guided practice • Independent practice • Intervention/Enrichment • i-Ready	MyMath 6-14 p.461-466
31	Multiplying and dividing decimals	1, 8	To fluently multiply and divide decimals and use the skill in applications	*DO I know when to do what I need to do without needing to figure it out each time?*		• Independent practice • Intervention/Enrichment • i-Ready	MyMath p.467-470
32	Multiplying and dividing decimals	1, 8				• Review • Assessment	

Word Wall Candidates

Associative property	Commutative property	Identity property	Inverse operations	Quadrilateral
Triangle	Classify	Ordered pair	X axis	Y axis

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Day	**Topic**	**SLO**	**Learning Objectives**	**Essential Questions**	**Suggested Student Activities**		**Possible Resources**
					Whole Group	**Small Group / Stations**	

Authentic Application

Your goal: You are not likely to have time to entertain a project.

Your role:

Your audience:

The situation:

Your Product:

Success Criteria: