Belvidere Cluster Wide
Mathematics Curriculum
3rd grade
Updated Fall 2018

All Belvidere Cluster curriculum and instruction areas are aligned to the New Jersey Student Learning Standards (NJSLS) in accordance with the NJ Department of Education's curriculum implementation requirements.

Interdisciplinary Connections

– English Language Arts
– Science and Scientific Inquiry (Next Generation)
– Social Studies
– Technology
– Visual and Performing Arts

Technology Standards and Integration
iPads
Go Math online resources
Xtra Math
Interactive SmartBoard activities

NJSLA Technology
8.1.2.A.2
Create a document using a word processing application.
8.1.2.A.4
Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
8.1.P.B.1
Create a story about a picture taken by the student on a digital camera or mobile device.
8.1.P.C.1
Collaborate with peers by participating in interactive digital games or activities.
8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

CAREER EDUCATION (NJDOE CTE Clusters)

– Education & Training
– Finance
– Information Technology
– Science, Technology, Engineering & Mathematics (STEM)

21st Century Skills/ Themes

– Financial, Economic, Business and Entrepreneurial Literacy
– Creativity and Innovation
– Critical Thinking
– Problem Solving

– Communication
– Collaboration
– Information Literacy

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

Integrated Accommodations and Modifications

Special Education

– Printed copy of board work/notes provided
– Additional time for skill mastery
– Assistive technology
– Behavior management plan
– Center-Based Instruction
– Check work frequently for understanding
– Computer or electronic device utilization
– Extended time on tests/ quizzes
– Have student repeat directions to check for understanding
– Highlighted text visual presentation
– Modified assignment format
– Modified test content
– Modified test format
– Modified test length
– Multiple test sessions
– Multi-sensory presentation
– Preferential seating
– Preview of content, concepts, and vocabulary
– Reduced/shortened written assignments
– Secure attention before giving instruction/directions
– Shortened assignments
– Student working with an assigned partner
– Teacher initiated weekly assignment sheet
– Use open book, study guides, test prototypes
– Cubing activities
– Exploration by interest
– Flexible grouping
– Goal setting with students
– Jigsaw
– Mini workshops to re-teach or extend skills Open-ended activities
– Think-Pair-Share
– Varied supplemental materials

ELL

– Allowing students to correct errors (looking for understanding)
– Teaching key aspects of a topic Eliminate nonessential information Using videos, illustrations, pictures, and drawings to explain or clarify
– allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slideshows, videos, etc.) to demonstrate student's learning
– Allowing students to correct errors (looking for understanding)
– Allowing the use of note cards or open-book during testing
– Decreasing the amount of work presented or required
– Having peers take notes or providing a copy of the teacher's notes
– Modifying tests to reflect selected objectives
– Providing study guides
– Reducing the number of answer choices on a multiple choice test
– Tutoring by peers
– Explain/clarify key vocabulary terms

At Risk

– Allowing students to correct errors (looking for understanding)
– Teaching key aspects of a topic Eliminate nonessential information allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slideshows, videos, etc.) to demonstrate student's learning
– Allowing students to select from given choices .
– Allowing the use of note cards or open-book during testing
– Collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test
– decreasing the amount of work presented or required .
– Having peers take notes or providing a copy of the teacher's notes
– Marking students' correct and acceptable work, not the mistakes
– Modifying tests to reflect selected objectives
– Providing study guides
– Reducing the number of answer choices on a multiple choice test
– Tutoring by peers
– Using authentic assessments with real-life problem-solving
– Using true/false, matching, or fill in the blank tests in lieu of essay tests
– using videos, illustrations, pictures, and drawings to explain or clarify
– Flexible grouping
– Goal setting with students
– Jigsaw
– Mini workshops to re-teach or extend skills Open-ended activities
– Think-Pair-Share
– Varied supplemental materials

Gifted and Talented

– Alternative formative and summative assessments
– Choice boards
– Games and tournaments
– Group investigations
– Independent research and projects Interest groups for real world application
– Learning contracts
– Leveled rubrics
– Multiple intelligence options

– Personal agendas
– Project-based learning
– Problem-based learning
– Stations/centers
– Think-Tac-Toes
– Tiered activities/assignments
– Tiered products

504
– Printed copy of board work/notes provided
– Additional time for skill mastery
– Assistive technology
– Behavior management plan
– Center-Based Instruction
– Check work frequently for understanding
– Computer or electronic device utilization
– Extended time on tests/ quizzes
– Have student repeat directions to check for understanding
– Highlighted text visual presentation
– Modified assignment format
– Modified test content
– Modified test format
– Modified test length
– Multiple test sessions
– Multi-sensory presentation
– Preferential seating
– Preview of content, concepts, and vocabulary
– Reduced/shortened written assignments
– Secure attention before giving instruction/directions
– Shortened assignments
– Student working with an assigned partner
– Seacher initiated weekly assignment sheet
– Use open book, study guides, test prototype
– Exploration by interest
– Flexible grouping
– Goal setting with students
– Mini workshops to re-teach or extend skills Open-ended activities
– Think-Pair-Share
– Varied supplemental materials

Belvidere Cluster Wide Mathematics Curriculum Grade 3 Unit Plan # 1	
Title: Place Value	
Grade Level: 3	**Approximate Time: 5 weeks**
Unit Summary: Place value provides the concepts and the foundation for all aspects and use of whole-number understanding and computation. Understanding the value and ordering of numbers along with computational flexibility will help students address real world situations.	
Learning Targets	
PARCC ■ Major Clusters; ◘ Supporting Clusters; ○ Additional Clusters	
Domain: Number and Operation in Base Ten 3.NBT	
Cluster: Understand Place Value and properties of operations to perform multi digit arithmetic.	
Standard #s:	**Standards**
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100
3.NBT.2	Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and or the relationship between addition and subtraction.
Domain: Operations in Algebraic Thinking 3.OA	
Cluster: Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
Standard # s:	**Standards:**
3.OA.8	Solve two step word problems using the four operations. Represent these problems using equations with the letter standing for the unknown quantity. Assess the reasonableness of answers using mental computations and estimation strategies including rounding.

3.OA.9	Identify arithmetic patterns and (including patterns in the addition table and multiplication table), and explain them using properties of operations.

Unit Essential Questions:	**Unit Enduring Understandings:**
● How does estimation and rounding help you work with large numbers? ● What strategies and algorithms can you use to help you add and subtract large numbers? ● How would you use an equation to solve a word problem? ● How do number patterns and skip counting help you to solve number problems?	● Estimation and Rounding are two ways you can use to understand the value of a number. ● Strategies and algorithms are used when adding and subtracting numbers. ● When solving word problems in math, equations help organize your information. ● It's important to look for and find patterns in numbers.

Unit Objectives:

- *Students will be able to determine the place value of digits in a number within the 1,000's place.*
- *Students will be able to read, write, compare and order numbers within the 1,000's place.*
- *Students will be able to add and subtract within the 1,000's place.*
- *Students will be able to solve two step word problems using the four operations.*
- *Students will be able to write and solve simple number sentences.*
- *Student will be able to estimate and round numbers (using mental math when appropriate) within the 1,000's place.*
- *Students will be able to identify and apply patterns within numbers to solve number problems.*

Evidence of Learning

Possible Formative Assessments:

- SMART Response Questions used throughout unit
- Quizzes
- Classwork
- Homework

Summative Assessment:

- Unit Test

Possible Benchmark Assessments:

- Go Math Benchmark
- Unit Assessment

Possible Alternative Assessments:

- Choice boards - projects
- Skit
- Demonstration
- Journaling
- Conferencing

Suggested Lesson Plan

Topics	Approximate Timeframe
Topic #1: Understand the place value of a number within the 1,000's place. Lab: Place Your Number Value	2 days
Topic #2: Standard, Numeric and Expanded forms of numbers within the 1,000's place. Lab: Carpet Square Math **Possible Quiz #1**	2 days
Topic #3: Comparing Numbers	1 day
Topic #4: Ordering Numbers	1 day

Topic #5: Rounding to the Nearest Ten	1 day
Topic #6: Rounding to the Nearest Hundred/ More Rounding Practice **Possible Quiz #2**	2 days
Topic #7: Addition -Addition Properties -Missing Addends -Estimate Sums -Add 2 digit numbers -Add 3 digit numbers -Addition Story Problems Lab: RAFT- 1000 Wins **Possible Quiz #3**	6 days
Topic #8: Subtraction -Estimate Differences -2 Digit Subtraction -3 Digit Subtraction -Subtraction Across Zeros -Checking Subtraction with Addition **Possible Quiz #4**	6 days
Topic #9: Solving 2 step word problems	1 day
Topic #10: Patterns	1 day
Topic #11: Review and Unit Test	2 days
Curriculum Resources ● https://njctl.org/courses/math/3rd-grade-math/place-value/ ● http://www.raftbayarea.org/ideas/Place%20Your%20Number%20Value.pdf ● http://www.raftbayarea.org/ideas/Carpet%20Square%20Math.pdf ● http://www.raftbayarea.org/ideas/1000%20Wins.pdf ● Approved Classroom Textbooks	

Belvidere Cluster Wide Mathematics Curriculum Grade 3 Unit Plan # 2	
Title: Multiplication	
Grade Level: 3	**Approximate Time:** 6 weeks
Unit Summary: Multiplication involves using arrays, picture models, groupings, and memorization of fact table and fact families up to 9. Students will solve word problems using the strategies listed above. Students will become fluent in all their multiplication facts up to 9. Multiplication will be applied to solving area problems to further understanding of multiplication facts.	
Learning Targets	
PARCC ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters	
Domain: Operations and Algebraic Thinking 3.OA	
Cluster: Represent and solve problems involving multiplication and division.	
Standard #s:	**Standards:**
3.OA.1	Interpret products of whole numbers, e.g., interpret 5 times 7 as the total number of objects in five groups of seven objects each.
3.OA.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays and measurement quantities, e.g. by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.4	Determine the unknown whole number in a multiplication and division equation relating three whole numbers.
3.OA.5	Apply properties of operations as strategies to multiply and divide
3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division.
Domain: Numbers and Operations in Base Ten 3.NBT	
Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.	

Standard # :	**Standard:**
3.NBT.3	Multiply one digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.
Domain: Measurement and Data 3.MD	
Cluster: Solve problems involving measurement and estimation of intervals of time, liquid volumes and masses of objects.	
Standard # s:	**Standard:**
3.MD.5	Recognize area as an attribute of plane figures and understand concepts of area and measurements a. A square with side length one unit, called a unit square is set to have one square unit of area, and can be used to measure area. b. A plane figure which can be covered without gaps and overlaps by ***n*** unit squares is said to have an area of ***n*** square units.
3.MD.6	Measure areas by counting unit squares (square centimeters, square meters, square inches, square feet and improvised units).
3.MD.7	Relate area to the operations of multiplication and division. a. Find the area of a rectangle with whole number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangle with whole number side lengths in the context of solving real world and mathematical problems, and represent whole number products as rectangular areas in mathematical reasoning. c. Use tiling to show in a concrete case that he area of a rectangle with whole number side lengths *a* and *b + c* is the sum of *a x b* and *b x c*. Use area models to represent the distributive property in mathematical reasoning. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non overlapping rectangles and adding the areas of the non overlapping parts, applying this technique to solve real world problems.

Unit Essential Questions:	**Unit Enduring Understandings:**
● How does skip counting and number patterns relate to multiplication? ● How can arrays, grouping numbers and picture models help to understand multiplication problems? ● How can a multiplication fact table help you to learn and memorize multiplication facts to 9? ● What are some strategies you can use to help solve multi-step multiplication word problems? ● How does finding the area of a rectangle relate to multiplication?	● Skip counting and number patterns help you to understand and memorize multiplication facts. ● Arrays, grouping numbers and picture models are a visual tool in understanding properties of multiplication/division. ● Fluency with your multiplication facts will help you to solve problems with accuracy and speed. ● Multiplication facts can be applied to solving area shapes.

Unit Objectives:

- *Students will be able to use arrays, number groupings and picture models to understand multiplication properties.*
- *Students will be able to solve and write simple multiplication stories using equal groups.*
- *Students will be able to use a multiplication fact table and fact families to learn and memorize multiplication facts to 9.*
- *Students will be able to write and solve simple number sentences and word problems involving multiplication.*
- *Students will apply multiplication facts to finding the area of rectangles.*

Evidence of Learning	
Possible Formative Assessments: ● SMART Response Questions used throughout unit ● Quizzes ● Classwork ● Homework	
Summative Assessment: ● Unit Test	
Possible Benchmark Assessments: ● Go Math Benchmark ● Unit Assessment	
Possible Alternative Assessments: ● Choice boards - projects ● Skit ● Demonstration ● Journaling ● Conferencing	
Suggested Lesson Plan	
Topics	**Approximate Timeframe**
Topic #1: Introduce arrays and picture models to demonstrate multiplication properties Lab: RAFT – Commutative Cookies	3 days
Topic #2: Properties of Multiplication: Property of One (Multiplicative Identity) and Property of Zero when multiplying numbers	2 days
Topic #3: Introduce Multiplication Fact Families 2-9/ **Possible Quiz #1 (after multiply by 5's)** **Possible Quiz #2 (after multiply by 9's)** Lab: RAFT – Good Times Roll Lab: RAFT – Carnival Math	16 days
Topic #4: Squares and Rectangles	1 day
Topic #5: Measure area by counting unit squares and by tiling	2 day
Topic #6: Apply multiplication to finding the area of rectangles **Possible Quiz #3**	4 days
Topic #7: Write and Draw multiplication number sentences to solve multiplication problems	Inclusive
Topic #8: Solve and write multiplication word problems	Inclusive
Topic #9: Review and Unit Test	2 days
Curriculum Resources ● https://njctl.org/courses/math/3rd-grade-math/multiplication/ ● http://www.raftbayarea.org/ideas/Commutative%20Cookies.pdf ● http://www.raftbayarea.org/ideas/Good%20Times%20Roll.pdf ● http://www.raftbayarea.org/ideas/Carnival%20Math.pdf ● Approved Classroom Textbooks	

Belvidere Cluster Wide **Mathematics Curriculum** **Grade 3** **Unit Plan # 3**	
Title: Division	
Grade Level: 3	**Approximate Time:** 5 weeks
Unit Summary: Division involves breaking apart arrays, picture models, groupings, and recall and usage of fact table and fact families up to 9. Students will solve word problems using the strategies listed above. Students will become fluent at dividing when using divisors up to and including 9.	
Learning Targets	
PARCC ■ Major Clusters; ◘ Supporting Clusters; ○ Additional Clusters	
Domain: Operations and Algebraic Thinking 3.OA	
Cluster: Represent and solve problems involving multiplication and division	
Standard #s:	**Standards:**
3.OA.2	Interpret whole number quotients Determine the unknown whole number in a multiplication or division equations relating three whole numbers
3.OA.3	Use Multiplication and Division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g. by using drawings and equations with a symbol of the unknown number to represent the problem
3.OA.4	Determine the unknown whole number in a multiplication or division equations relating three whole numbers
Cluster: Understand properties of multiplication and the relationship between multiplication and division	
Standard #s:	**Standards:**
3.OA.5	Apply properties of operations as strategies to multiply and divide

3.OA.6	Understand division as an unknown-factor problem
Cluster: Multiply and divide within 100	
Standard #:	**Standard:**
3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations.

Unit Essential Question:	**Unit Enduring Understandings:**
● How can breaking apart arrays, grouping objects and picture models help to understand and solve division problems? ● How can a multiplication fact table help you to learn and memorize division facts up to and including 9? ● What are some strategies you can use to help solve multi-step division word problems?	● Arrays, grouping numbers and picture models are a visual tool in understanding properties of multiplication/division. ● Fluency with your multiplication and division facts will help you to solve problems division problems with accuracy and speed.

Evidence of Learning

Unit Objectives:

- *Students will be able to use arrays, number groupings and picture models to understand division properties.*
- *Students will be able to solve and write simple division stories using equal groups.*
- *Students will be able to use a multiplication fact table and fact families to learn and memorize multiplication and division facts up to and including 9 as a factor/divisor.*
- *Students will be able to write and solve simple word problems and write number sentences that involve multiplication and division.*

Possible Formative Assessments:

- SMART Response Questions used throughout unit
- Quizzes
- Classwork
- Homework

Summative Assessment:

- Unit Test

Possible Benchmark Assessments:

- Go Math Benchmark
- Unit Assessment

Possible Alternative Assessments:

- Choice boards - projects
- Skit
- Demonstration
- Journaling
- Conferencing

Suggested Lesson Plan

Topics	Approximate Timeframe
Topic #1: Use arrays and picture models to demonstrate division properties	3 days
Topic #2: Write and draw division number sentences using multiplication to help solve the problem **Possible Quiz #1**	3 days

Topic #3: Practice and memorize division facts up to 9 ● Divide by 1 ● Divide by 2/ **Possible Quiz #2** ● Divide by 3 ● Divide by 4/ **Possible Quiz #3** ● Divide by 5 ● Divide by 6/ **Possible Quiz #4** ● Divide by 7 ● Divide by 8/ **Possible Quiz #5** ● Divide by 9/ **Possible Quiz #6**	13 days
Topic #4: Solve and write division word problems Lab: Monkey Business **Possible Quiz #7**	4 days
Topic #5: Review and Unit Test	2 days
Curriculum Resources ● https://njctl.org/courses/math/3rd-grade-math/division/ ● Approved Classroom Textbooks	

Belvidere Cluster Wide **Mathematics Curriculum** **Grade 3** **Unit Plan # 4**	
Title: Time, Volume & Mass	
Grade Level: 3	**Approximate Time:** 3 weeks
Unit Summary: This unit will develop telling time to the minute using a digital and analog clock. In this unit students will also measure and estimate liquid volumes and masses of objects using standard units of measurement (kilograms, liters, grams).	
Learning Targets	
PARCC ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters	
Domain: Measurement and Data 3.MD	
Cluster: Solve problems using measurement and estimations of intervals of time, liquid volumes, and masses of objects.	

Standard #s:	**Standards:**
3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.
3.MD.2	Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms and liters. Add, subtract, multiply, or divide to solve one step word problems involving masses or volumes that are given in the same units.

Unit Essential Questions:	**Unit Enduring Understandings:**
● How can an analog clock help you to determine the time, estimate time and find elapsed time? ● What are the different units of measurement you can use to classify the capacity, weight and mass of an object? ● What tools can you use to measure the capacity, weight and mass of an object?	● Students will understand that analog and digital clocks help them to determine what time it is and how much time has passed and how to estimate time. ● Students will understand that there are different units of measurement for the volume and mass of objects.

	● Students will understand that objects have different capacity, weight and mass.

Evidence of Learning

Unit Objectives:

- *Students will read, write, and tell time on analog and digital clocks to the nearest hour, half hour and quarter hour. Students will divide models to make equal shares*
- *Students will read write and tell time on analog and digital clocks to the nearest 5 minute and nearest minute.*
- *Students will decide when to use A.M. and P.M. with time.*
- *Students will use a number line or an analog clock to find elapsed time.*
- *Students will estimate and measure capacity in customary units.*
- *Students will change a measure of capacity in customary units from larger to smaller units or from smaller units to larger mixed units.*
- *Students will estimate and measure weight in ounces and pounds.*
- *Students will change measures of weight in customary units from larger units to smaller units or from smaller units to larger mixed units.*
- *Students will estimate and measure capacity and mass in metric units.*

Possible Formative Assessments:

- SMART Response Questions used throughout unit
- Quizzes
- Homework
- Classwork

Summative Assessment:

- Unit Test

Possible Benchmark Assessments:

- Go Math Benchmark
- Unit Assessment

Possible Alternative Assessments:

- Choice boards - projects
- Skit
- Demonstration
- Journaling
- Conferencing

Suggested Lesson Plan

Topics	Approximate Timeframe
Topic #1- Review the parts of an analog clock and tell time to the nearest hour and half hour.	1 day
Topic #2 - Tell time to the nearest quarter hour, nearest five minutes and nearest minute.	2 days
Topic #3 - Elapsed time using a number line and an analog clock.	2 days
Topic #4 - AM & PM **Possible Quiz #1**	1 day
Topic #5 - Measure and estimate liquid volumes. Lab: RAFT – Foam Squeeze Frenzy	2 days
Topic #6 - Volume Word Problems **Possible Quiz #2**	2 days
Topic #7- Measure and estimate mass	1 day
Topic #8 - Mass Word Problems **Possible Quiz #3**	2 days

Unit Review & Assessment	2 days

Curriculum Resources

- https://njctl.org/courses/math/3rd-grade-math/time/
- http://www.raftbayarea.org/ideas/Foam%20Squeeze%20Frenzy.pdf
- Approved Classroom Textbooks

Belvidere Cluster Wide
Mathematics Curriculum
Grade 3
Unit Plan # 5

Title: Fractions

Grade Level: 3 | **Approximate Time:** 6 weeks

Unit Summary: This unit will develop the use of fractions and fraction notation, and help children develop the understanding of equivalent fractions. Fractions are a part of a whole and are used in measurement. In this unit number line diagrams will be introduced and used to show and demonstrate the value of a fraction. The ruler will also be used to measure lengths and estimate the measurement of various objects and distances to the nearest half and quarter of an inch.

Learning Targets

PARCC ■ Major Clusters; ▣ Supporting Clusters; ○ Additional Clusters

Domain: Number and Operations-Fractions 3.NF

Cluster: Develop understanding of fractions as numbers

Standard #s:	**Standards:**
3.NF.1	Understand a fraction *1 / b* as the quantity formed by one part when a whole is partitioned into b equal parts: understand a fraction *a / b* as the quantity formed by parts of size *1/b*.
3.NF.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram a. Represent a fractions *1/ b* on a number line diagram by defining the interval from zero to one as the whole and portioning it into b equal parts. Recognize that each part has size *1/b* and that the endpoint of the part based at zero locates the number *1/ b* on the number line. Represent a fraction *a/b* on a number line diagram by marking off lengths *1/b* from zero recognize that the resulting interval has size *a/b* and that its endpoint locates the number *a/b* on the number line.
3.NF.3	Explain equivalents of fractions in special cases, and compare fractions by reasoning about their size.

	a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on the number line. b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. c. Express whole numbers fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerators or the same denominators by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of the comparisons with the symbols <, >, or = and justify the conclusions.
Domain: Measurement and Data 3.MD	
Cluster: Represent and interpret data	
Standard #:	**Standard:**
3.MD.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by marking a line plot with a horizontal scale is marked off in appropriate units-whole numbers halves and quart.
Domain: Geometry	
Cluster: Reason with shapes and their attributes.	
Standard #:	**Standard:**
3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*
Unit Objectives: ● *Students will explore and identify equal parts of a whole* ● *Students will divide models to make equal shares* ● *Students will use a fraction to name one part of a whole that is divided into equal parts* ● *Students will model read and write fractional parts of a group* ● *Students will find fractional parts of a group* ● *Student will use a number line diagram to locate and compare fractions* ● *Students will measure length to the nearest half inch, quarter inch.*	
Possible Formative Assessments: ● SMART Response Questions used throughout unit ● Quizzes ● Classwork ● Homework	
Summative Assessment: ● Unit Test	
Possible Benchmark Assessments: ● Go Math Benchmark ● Unit Assessment	
Possible Alternative Assessments: ● Choice boards - projects ● Skit ● Demonstration ● Journaling ● Conferencing	
Suggested Lesson Plan	

Topics	Approximate Timeframe
Topic #1: Equal parts of a whole/equal shares	1 day
Topic #2: Find a part of a group	2 days
Topic #3: Exploring fractions with pattern blocks/ **Possible Quiz #1**	1 day
Topic #4: Order Fractions using a number line/ **Possible Quiz #2**	4 days
Topic #5: Compare fractions with the same denominators or the same numerators	5 days
Topic #6: Compare fractions using benchmarks/ **Possible Quiz #3**	3 days
Topic #7: Model equivalent fractions and recognize equivalent fractions Lab: RAFT- Flip Over Fractions **Possible Quiz #4**	4 days
Topic #8: Whole number fractions **Possible Quiz #5**	3 days
Topic #9: Measure a line to the nearest half inch and quarter inch **Possible Quiz #6**	5 days
Review and Unit Test	2 days
Curriculum Resources ● https://njctl.org/courses/math/3rd-grade-math/fractions/ ● http://www.raftbayarea.org/ideas/Flip%20Over%20Fractions.pdf ● Approved Classroom Textbooks	

Belvidere Cluster Wide
Mathematics Curriculum
Grade 3
Unit Plan # 6

Title: Graphs

Grade Level: 3	**Approximate Time:** 3 weeks

Unit Summary: This unit will be enable students to interpret data using graphs, solve one and two step problems and create graphs using a data set.

Learning Targets

PARCC ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters

Domain: Measurement and Data 3.MD

Cluster: Represent and interpret data

Standard #:	**Standard:**
3.MD.3	Draw a scaled pictograph and scaled bar graph to represent a data set with several categories. Solve one-and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.

Unit Essential Questions:	**Unit Enduring Understandings:**
● What are some ways you can represent data? ● How do you read a tally table and frequency chart? ● What are the steps in reading and making a bar graph? ● What are the steps in reading and making a pictograph? ● What are the steps in reading and making a line plot?	● Data can be represented in a bar graph, pictograph and line plot. ● Tally table and frequency tables are useful when collecting and organized data. ● Bar graphs, pictographs and line plots are used to show data in a more functional way. ● Measuring with a ruler is an important life skill

Evidence of Learning

Unit Objectives:

- *Students will collect and record data in tally tables and frequency tables.*

- *Students will solve problems by using the strategy make a table.*
- *Students will read and interpret data in a pictograph.*
- *Students will make a pictograph to show data in a table.*
- *Students will read and interpret data on a bar graph.*
- *Students will make a bar graph to show data in a table or pictograph.*
- *Students will use data represented in bar graphs and pictographs to solve problems.*
- *Students will read and interpret data in a line plot.*

Possible Formative Assessments:

- SMART Response Questions used throughout unit
- Quizzes
- Classwork
- Homework

Summative Assessment:

- Unit Test

Possible Benchmark Assessments:

- Go Math Benchmark
- Unit Assessment

Possible Alternative Assessments:

- Choice boards - projects
- Skit
- Demonstration
- Journaling
- Conferencing

Suggested Lesson Plan

Topics	Approximate Timeframe
Topic #1- Tally and Frequency Tables	2 days
Topic #2 – Creating a Tally and Frequency Table **Possible Quiz #1**	2 days
Topic #3 - Pictographs	1 day
Topic #4 – Creating a pictograph **Possible Quiz #2**	2 days
Topic #5- Bar Graphs	1 day
Topic #6- Creating a Bar Graph **Possible Quiz #3**	2 days
Topic #7- Line Plots	1 day
Topic #8- Creating a line plot **Possible Quiz #4**	1 day
Topic #9- Problem Solving Using Graphs	1 day
Topic #10- Review and Unit Test	2 days

Curriculum Resources

- https://njctl.org/courses/math/3rd-grade-math/graphs/
- Approved Classroom Textbooks

Belvidere Cluster Wide **Mathematics Curriculum** **Grade 3** **Unit Plan # 7**	
Title: Shapes and Perimeter	
Grade Level: 3	**Approximate Time:** 4 weeks
Unit Summary: This unit introduces to students to different shapes, such as polygons and quadrilaterals, and defines their properties. They will use area and perimeter to solve real world application problems. Angles, lines, rays, and line segments will also be introduced and defined.	
Learning Targets	
PARCC ■ Major Clusters; ◘ Supporting Clusters; ○ Additional Clusters	
Domain: Geometry	
Cluster: Reason with shapes and their attributes..	
Standard #:	**Standard:**
3.G.1	Understand that shapes in different categories (e.g. rhombuses, rectangles (and others) may share attributes and that the shared attributes can define a larger category. Recognize rhombuses and rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
Domain: Measurement and Data	
Cluster: Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	
Standard #:	**Standard:**
3.MD.7	Relate area to the operations of multiplication and division. a. Find the area of a rectangle with whole number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangle with whole number side lengths in the context of solving real world and mathematical problems,

	and represent whole number products as rectangular areas in mathematical reasoning. c. Use tiling to show in a concrete case that he area of a rectangle with whole number side lengths *a* and *b + c* is the sum of *a x b* and *b x c*. Use area models to represent the distributive property in mathematical reasoning. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non overlapping rectangles and adding the areas of the non overlapping parts, applying this technique to solve real world problems.
3.MD.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Unit Essential Questions:	**Unit Enduring Understandings:**
· How is perimeter used to solve real world application problems? · How are lines, rays, and line segments useful when dealing with angles and polygons?	· Area and perimeter can be used to solve real world application problems. · Lines, rays, and line segments are necessary to form angles and polygons. · Parallel and Intersecting lines differ and are relevant when solving problems with angles and polygons.

Unit Objectives:

· Students will be able to compute the area and perimeter of quadrilaterals.
· Students will distinguish between lines, rays, and line segments.
· Students will identify different types of angles.
· Students will draw and recognize parallel and intersecting lines.
· Students will understand the characteristics of polygons and quadrilaterals.
· Students will solve real world problems using properties of perimeter and polygons.

Evidence of Learning

Possible Formative Assessments:

· SMART Response Questions used throughout unit
· Quizzes
· Homework
· Classwork

Summative Assessment:

· Unit Test

Possible Benchmark Assessments:

- Go Math Benchmark
- Unit Assessment

Possible Alternative Assessments:

- Choice boards - projects
- Skit
- Demonstration
- Journaling
- Conferencing

Suggested Lesson Plan	
Topics	**Approximate Timeframe**

Topic #1: Area	3 days
Topic #2: Perimeter **Possible Quiz #1**	4 days
Topic #3: Lines, Rays and Line Segments	2 days
Topic #4: Angles	2 days
Topic #5: Parallel and Intersecting Lines **Possible Quiz #2**	2.5 days
Topic #6: Polygons	2 days
Topic #7: Quadrilaterals **Possible Quiz #3**	2.5 days
Review & Unit Test	2 days
Curriculum Resources ● https://njctl.org/courses/math/3rd-grade-math/shapes-and-perimeter/ ● Approved Classroom Textbooks	