3rd Grade Math Curriculum

Egg Harbor Township School District

State Board Adoption Date of Standards: 5/2016

Unit Overview (Standards Coverage)

Unit	Standards	Unit Focus	Standards for Mathematical Practice	Open Educational Resources
Unit 1 *Topic 1 - 10 Days* *Understand multiplication and division of whole numbers* *Topic 2 - 10 days* *Multiplication facts using patterns* *Topic 3 - 12 days* *Apply properties: Multiplication properties (3,4,6,7,8)* *Topic 4 - 14 days* *Use multiplication to divide* *Topic 5 - 18 days* *Fluently multiply and divide within 100* *Topic 6 - 10 days* *Connect area to multiplication and addition* *Total 64 days*	• 3.OA.A.1 • 3.OA.A.2 • 3.OA.A.3* • 3.OA.A.4 • 3.OA.B.6 • 3.MD.C.5 • 3.MD.C.6 • 3.MD.C.7a-b	• Represent and solve problems involving multiplication and division • Understand properties of multiplication and the relationship between multiplication and division • Understand concepts of area and relate area to multiplication and addition	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning	3.OA.A.2 Fish Tanks 3.OA.A.3 Analyzing Word Problems Involving Multiplication 3.OA.A.4 Finding the unknown in a division equation 3.MD.C.6 Finding the Area of Polygons 3.MD.C.7a India's Bathroom Tiles 3.OA.A.3 Two Interpretations of Division 3.OA.B.5 Valid Equalities? (Part 2) 3.MD.C.7c Introducing the Distributive Property
Unit 2 *Topic 7 - 10 days* *Represent and interpret data* *Topic 8 - 13 days* *Use strategies and properties to add and subtract*	• 3.MD.B.3 • 3.NBT.A.1 • 3.NBT.A.3 • 3.NF.A.2 • 3.NF.A.3	• Represent and interpret data • Use place value understanding and properties of operations to perform multi-digit arithmetic		3.NBT.A.1 Rounding to 50 or 500 3.NBT.A.1 Rounding to the Nearest Ten and Hundred 3.NF.A.1 Naming the Whole for a Fraction

Topic 9 - 12 days *Fluently add and subtract within 1000* *Topic 10 - 4 days* *Multiply by multiples of 10* *Topic 12 - 11 days* *Develop understanding of fractions as numbers* *Total 50 days*		• Multiply and divide within 100 • Develop understanding of fractions as numbers		3.NBT.A.2, 3.MD.B.3, 3.OA.A.3 Classroom Supplies 3.G.A.2 Representing Half of a Circle 3.NF.A.2 Closest to 1/2 3.NF.A.2 Find 1 Starting from 5/3
Unit 3 *Topic 13 - 11 days* *Fractions Equivalence and comparison* *Topic 14 - 14 days* *Solve time, capacity, mass problems* *Topic 15 - 6 days* *Attributes of two dimensional shapes* *Topic 16 - 9 days* *Solve perimeter problems* *Topic 11 - 8 days* *Use operations with whole numbers to solve problems.* *Total 48 days*	• 3.NF.A.3 • 3.MD.A.1 • 3.MD.A.2 • 3.G.A.1 • 3.MD.D.8 • 3.OA.D.8	• Find and represent equivalent fractions on a number line • Use models,benchmark numbers, and number lines to compare fractions • Solve problems involving measurement and estimation • Reason with shapes and their attributes • Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures • Solve problems involving the four operations and identify and explain patterns in arithmetic		3.NF.A.2 Locating Fractions Greater than One on the Number Line 3.NF.A.3b, 3.G.A.2, 3.MD.C.6 Halves, thirds, and sixths 3.MD.A.1 Dajuana's Homework 3.MD.A.2 How Heavy? 3.MD.D Shapes and their Insides

<table>
<tr><th colspan="3">Unit 1 MATH 3RD GRADE</th></tr>
<tr><th>Content & Practice Standards</th><th>Interdisciplinary Standards</th><th>Critical Knowledge & Skills</th></tr>
<tr><td>● 3.OA.A.1. Interpret products of whole numbers, e.g., interpret 5 x 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 x 7.</td><td rowspan="2">RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

● RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
● W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
● SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
● SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally
● RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
● W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
● SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.</td><td>Concept(s):

● Multiplication is a means to determine the total number of objects when there are a specific number of groups with the same number of objects in each group.
● Multiplication gives the same result as repeated addition.
● Product of two whole numbers is the total number of objects in a number of equal groups.
Students are able to:

● interpret products of whole numbers as a total number of objects.
● use repeated addition to find the total number of objects arranged in an array and in equal groups and compare to the result of multiplication.
● describe a context in which a total number of objects is represented by a product.
● interpret the product in the context of a real-world problem.
Learning Goal: Interpret products of whole numbers as repeated addition and as the total number of objects (up to 100) in equal groups or arrays.</td></tr>
<tr><td>● 3.OA.A.2. Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned</td><td>Concept(s):</td></tr>
</table>

equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.	• SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	• Division is a means to finding equal groups of objects. • Division gives the same result as repeated subtraction. • Quotient of two whole numbers is the number of objects in each share when objects are grouped equally into shares. • Quotient of two whole numbers is the number of shares when objects are grouped into equal shares of objects. Students are able to: • interpret division of whole numbers as a number of equal shares or the number of groups when objects are divided equally. • use repeated subtraction to find the number of shares or the number of groups and compare to the result of division. • describe a context in which the number of shares or number of groups is represented with division. • interpret the quotient in the context of a real-world problem. Learning Goal : Interpret the quotient as a set of objects (up to 100) partitioned equally into a number of shares and as the number of equal share
3.OA.A.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.		Concept(s): No new concept(s) introduced Students are able to: • multiply to solve word problems involving equal groups and arrays.

		• divide to solve word problems involving equal groups and arrays. • represent a word problem with a drawing showing equal groups, arrays, equal shares, and/or total objects. • represent a word problem with an equation. Learning Goal : Use multiplication and division within 100 to solve word problems by modeling equal groups or arrays and by writing equations to represent equal groups or arrays.
3.OA.A.4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = ÷ 3, 6 × 6 = ?.		Concept(s): • Equal sign indicates that the value of the numerical expressions on each side are the same. • Unknown in an equation (4 x __ = 20 and 20 = ? x 4) represents a number. • Unknown can be in different positions. • Letters can represent numbers in equations. Students are able to: • determine which operation is needed to find the unknown. • multiply or divide, within 100, to find the unknown whole number in a multiplication or division equation. Learning Goal: Determine the unknown in a division or multiplication equation relating 3 whole numbers (within 100).

• 3.OA.B.6. Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.		Concept(s): • Division can be represented as a multiplication problem having an unknown factor. • Relationships between factors, products, quotients, divisors and dividends. Students are able to: • write division number sentences as unknown factor problems. • solve division of whole numbers by finding the unknown factors Learning Goal: Solve division of whole numbers by representing the problem as an unknown factor problem.
• 3.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement. 3.MD.C.5a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. 3.MD.C.5b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units. 3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).		Concept(s): • Area is the amount of space inside the boundary of a (closed) figure. • Square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. • Plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units area can be found by covering a figure with unit squares. • Area of a figure can be determined using unit squares of other dimensions. Students are able to:

		• count unit squares in order to measure the area of a figure. • use unit squares of centimeters, meters, inches, feet, and other units to measure area. Learning Goal: Measure areas by counting unit squares (cm^2, m^2, in^2, ft^2, and improvised units).
3.MD.C.7. Relate area to the operations of multiplication and addition.		Concept(s): • Area of a rectangle is found by multiplying the side lengths. • Area of a rectangle may be found by tiling. Students are able to: • tile a rectangle with unit squares. • multiply side lengths of a rectangle to find its area and compare the result to that found by tiling the rectangle with unit squares. • solve real world and mathematical problems involving measurement. • represent a rectangular area as the product of whole-numbers Learning Goal: Tile a rectangle to find its area and explain the relationship between tiling and multiplying side lengths to find the area of rectangles; solve real world problems by multiplying side lengths to find areas of rectangles.

Unit 1 MATH 3RD GRADE

Stage 1 – Desired Results

UNIT SUMMARY	CORE AND SUPPLEMENTAL MATERIALS/RESOURCES
By the end of this unit, students will be able to: • Represent and solve problems involving multiplication and division	• Pearson Realize Envision Text • Moby Max

• Understand properties of multiplication and the relationship between multiplication and division • Understand concepts of area and relate area to multiplication and addition	

UNDERSTANDINGS

Students will understand that…

In topics 1 and 2, students will focus on interpreting the meaning of multiplication and division, and using patterns to begin to build fluency with multiplication facts.

In topics 3 and 4, students will focus on using known facts and properties of multiplication to learn the multiplication facts with factors of 3, 4, 6, 7, and 8, and using the relationship between multiplication and division to learn division facts.

In topic 5 focuses on applying strategies to achieve fluency with multiplication and division within 100.

In topics 6, students will develop a deep understanding of the concept of area. Beginning with concrete models and then moving to pictorial and abstract models, students come to understand how area is related to multiplication and addition.

Students will know…	**Students will be able to…**
• *Multiplication is a means to determine the total number of objects when there are a specific number of groups with the same number of objects in each group.* • *Multiplication gives the same result as repeated addition* • *Product of two whole numbers is the total number of objects in a number of equal groups* • *Division is a means to finding equal groups of objects*	*What should students be able to accomplish to demonstrate understanding?* • *interpret products of whole numbers as a total number of objects.* • *use repeated addition to find the total number of objects arranged in an array and in equal groups and compare to the result of multiplication.* • *describe a context in which a total number of objects is represented by a product.*

Stage 2 – Assessment Evidence

Performance Tasks/Use of Technology	Other Evidence:
www.pearsonrealize.com http://www1.linkit.com/ www.mobymax.com	Formative • Teacher observation • Exit slips/check for understanding • Oral assessments/conferencing • Daily classwork • Fluency checks • Quick Quiz • Student activity pages • Moby Max

	Summative ● LinkIt ● Moby Max ● Topic Assessments

Stage 3 – Learning Plan

The learning plan for students are as follows:
In topic 1 students will be learning the fundamentals of multiplication using repeated addition, arrays, and on a number line.
In topic 2, students will be learning multiplication with factors 0,1,2,5, 9, and 10.
In topic 3, students will apply properties with 3,4,6,7, and 8 as a factor.
In topic 4, students will relate multiplication and division.
In topic 5, students will use the multiplication table and create multiplication and division stories.
In topic 6, students will relate multiplication to area.

Student's final performance is based on on knowing the fundamentals of multiplication and division, but also their multiplication and division facts. This will be assessed through formative and summative tasks. The criteria is based on district assessments, as well as assessments through Pearson Realize Envision.

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks using quadrant D real life experiences, STEAM, and technology.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

•Organize and sequence the learning for maximal engagement and effectiveness, given the desired results.

Planned Differentiation & Interventions for Tiers I, II, III, ELL, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Gifted & Talented:

- "Differentiating the Lesson" in EnVision Math online resources for all sections
- "Additional Topics" in EnVision Math online resources to extend and enhance instruction
- Advanced Center Activities from EnVision Math
- Design Challenges
- Student Choice/Driven Activities
- Group Projects
- MobyMax
- LinkIt
- Rocket Math
- Intervention Central
- Do to Learn
- Differentiation Strategies for Math
- Discovery Education Math
- Everyday Mathematics
- Homework Spot
- Flash Card Math
- Math Fact Fluency

Tier I:

- Progress Monitoring/Data Tracking
- EnVision Math "Error Intervention" resource
- Visual Learning examples
- Working Backward problem solving EnVision Math resource
- Flash Cards
- Brain Pop
  Extended Time
- Flexible Grouping
- Centers/Small Group Instruction
- Peer Buddies

- Math Tutoring Center (HS only)
- Math Lab/Tutorial
- MobyMax
- LinkIt!
- Rocket Math
- Intervention Central
- Do to Learn
- Learning Ally
- Xtramath
- Differentiation Strategies for Math
- Discovery Education Math
- Everyday Mathematics
- Homework Spot
- Flash Card Math
- Math Fact Fluency
- EnVision Math Reteach resource

Tier II:

- EnVision Math Daily Assessment Resource
- Differentiated Instruction assignments through EnVision Math
- MobyMax
- Rocket Math
- Xtramath
- Flash Cards

Tier III:

- Intense Interventions to accelerate progress EnVision Math resource
- Focus Math
- Systematic Assessments to focus on specific deficits

ELL:

- EnVision Math resources available in Spanish
- Letters to Parents are available in the Resources by Chapter book to assist in guiding parents through each chapter and offer helpful suggestions they can use to demonstrate mathematical concepts for their child in daily activities. These letters are editable so teachers can customize them.
- Student Dynamic eBook Audio has the option to be read in English or Spanish
- Multi-Language Glossary for new Math vocabulary is available in 14 different languages.
- Audio version is available in English or Spanish.
- Game Closet can be accessed in English or Spanish, while also allowing for all students to play and understand these educational games.
- ELL Notes included in Teacher Edition to help teachers overcome obstacles.

- Record & Practice Journal available in Spanish.
- Student Journal available in Spanish.
- Chapter Reviews available in English and Spanish.
- Vocabulary Flash Cards
- Chunking Information
- Math Word Wall/Word Bank
- Multi-Sensory Instruction
- Use of Translation software
- Gradual Release Model
- TODOS: Mathematics for ALL - Excellence and Equity in Mathematics
- FABRIC - A Learning Paradigm for ELLs (NJDOE resource)

SPED:

- Menu Math (mostly for very low functioning students)
- MobyMax
- LinkIt!
- Xtramath
- Learning Ally (audio version for textbooks and other published materials) – Also available for 504 students
- Use of specialized equipment such as beeping balls, text to speech and speech to text software, special seats or desks
- Use of hands-on materials for problem solving
- Visual supports and Use of manipulatives
- Extended time to complete tests and assignments
- Graphic Organizers/Study Guides
- Mnemonic tricks to improve memory
- Reducing workload
  Centers/Small Group Instruction
- Adjusting accountability for standards by focusing only on essential standards
- Use of IPads or laptops for students with motor issues that make writing difficult
- Use of tangible rewards (certificates, small toys, etc. per behavior plan)
- Use prompts and model directions/assignments
- Use task analysis to break down activities and lessons into each individual step needed to complete the task
- Use concrete examples to teach concepts
- Have student repeat/rephrase written directions
- Provide multi-sensory, hands-on materials for instruction
- Chunking Information
- Modify all fine motor tasks for example: (fat crayons, pencil grip, adaptive scissors)
- Functional or practical emphasis

504:

- Learning Ally (audio version for textbooks and other published materials)
- Extra help opportunities
- Reduce workload
- Partial credit
- Allow use of calculator, when appropriate
- Modified length and time frame of assignments
- Alternate assessments with extended time
- Provide guided notes and study guides as needed (use interactive notebook)
- Preferential Seating
- Extra Practice
- Directions repeated, clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Use of manipulatives

Unit 2 MATH 3RD GRADE		
Content & Practice Standards	**Interdisciplinary Standards**	**Critical Knowledge & Skills**
3.MD.B.3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many	RL.3.1 Ask and answer questions, and make relevant connections to demonstrate	Concept(s): Graphs organize information and contain labels. Pictures and bars can represent numbers in graphs.

more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	understanding of a text, referring explicitly to the text as the basis for the answers. ● RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. ● W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. ● SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. ● SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally ● RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI.3.4 Determine the	Different graphs may display different scales. Students are able to: draw scaled picture graphs. draw scaled bar graphs. analyze, interpret and create bar graphs and pictographs in real world situations. solve "how many more" and "how many less" problems using scaled bar graphs. Learning Goal: Draw scaled picture and scaled bar graphs to represent data with several categories. Solve one and two-step word problems using scaled bar graphs
● 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.		Concept(s): ● Show measurements on a line plot displays the information in an organized way Students are able to: ● measure length using rulers marked with inch, quarter inch and half inch ● generate measurement data by measuring length and create a line plot of the data ● accurately measure several small objects using a standard ruler and display findings on a line plot ● display data on line plots with horizontal scales in whole numbers, halves, and quarters Learning Goal: Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units
● 3.NBT.A.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.		Students are able to: ● add and subtract <u>within 1000</u> with accuracy and efficiency.

	meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. • SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	Learning Goal: Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
• 3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. 3.NF.A.2a. Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line. 3.NF.A.2b. Represent a fraction *a*/*b* on a number line diagram by marking off *a* lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line. *[Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.]		Concept(s): • Fraction is a number and has its place on the number line. • When placing unit fractions on a number line, the space between 0 and 1 is the whole and must be partitioned into equal parts. • Each part of a whole has the same size (one-half, one-third, one-fourth, one-sixth or one-eighth). • Parts of the whole that begin at 0 and ends at 1/b on the number line is the location of fraction 1/b (one-half, one-third, one-fourth, one-sixth, or one-eighth). Students are able to: • partition a number line into parts of equal sizes between 0 and 1 (halves, thirds, fourths sixths and eighths). • plot unit fractions on the number line. • identify multiple parts (of length 1/b) on the number line. • plot a fraction on the number line by marking off multiple parts of size 1/b. • plot fractions equivalent to whole numbers including 0 and up to 5. Learning Goal: Draw a number line depicting the position of 1/b (with b = 2, 3, 4, 6, or 8); represent the unit fraction ¼ on the number line by partitioning the number line between 0 and 1 into 4 equal lengths and name the point at the end of the first length as the position of the unit

		fraction ¼; apply the same method for placing points 1/2, 1/3, 1/6, and 1/8 on the number line. Learning Goal: Draw a number line depicting the position of fraction *a*/*b* (with *b* = 2, 4, 3, 6, or 8, and including whole numbers up to 5).
3.NBT.A.3. Multiply one-digit whole numbers by multiples of 10 in the range 10 to 90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.		Concept(s): ● Multiples of 10 can be represented as a specific number of groups of ten. Students are able to: ● multiply to determine the total number of groups of ten. ● multiply one-digit whole numbers by multiples of 10.

Unit 2 MATH 3RD GRADE

Stage 1 – Desired Results

UNIT SUMMARY	**CORE AND SUPPLEMENTAL MATERIALS/RESOURCES**
In this unit, students will focus on interpreting data, using operations to perform multi digit arithmetic, multiply through multiples of 10, and understand fractions on a number line.	● Pearson Realize Envision Text ● Moby Max

UNDERSTANDINGS

Students will understand that…

Topic 7 focuses on reading and making scaled picture graphs and scaled bar graphs that represent a data set with several categories.

Topic 8 and 9 focus on fluency with addition and subtraction within 1000.

Topic 10 explores place value patterns when multiplying by a multiple of 10.

Topic 12 focuses on understanding that fractions are numbers that can represent a portion of a whole or a point on the number line.

Students will know…	**Students will be able to…**
By the end of this unit, students will be able to: ● Represent and interpret data ● Use place value understanding and properties of operations to perform multi-digit arithmetic ● Multiply and divide within 100 ● Develop understanding of fractions as numbers	● Read and make scaled picture graphs and scaled bar graphs ● Fluently add and subtract within 1,000. ● Explore place value patterns when multiplying by a multiple of 10. ● Understand that fractions are numbers that can represent a portion of a whole or a point on the number line.
Stage 2 – Assessment Evidence	
Performance Tasks/Use of Technology www.pearsonrealize.com http://www1.linkit.com/ www.mobymax.com	Other Evidence: Formative ● Teacher observation ● Exit slips/check for understanding ● Oral assessments/conferencing ● Daily classwork ● Fluency checks ● Quick Quiz ● Student activity pages Summative ● LinkIt ● Moby Max ● Topic Assessments
Stage 3 – Learning Plan	
In Topic 7 students will be able to represent and interpret data using picture and bar graphs. *In Topic 8 students will apply properties of addition and subtraction, and estimate sums and differences, and round whole numbers.* *In Topic 9 students will fluently add and subtract within 1,000.* *In Topic 10 students will multiply by multiples of 10.* *In Topic 12 students will divide regions into equal parts, use a number line to identify fractions less than and greater than 1, and interpret line plots.* *•Student's final performance is based on demonstrating the fundamentals of interpreting data, applying the properties of addition and subtraction to estimate and recognize fractions as numbers. This will be assessed through formative and summative tasks. The criteria is based on district assessments, as well as assessments through Pearson Realize Envision.*	

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks using quadrant D real life experiences, STEAM, and technology.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

Planned Differentiation & Interventions for Tiers I, II, III, ELL, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Gifted & Talented:

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- "Additional Topics" in EnVision Math online resources to extend and enhance instruction
- Advanced Center Activities from EnVision Math
- Design Challenges
- Student Choice/Driven Activities
- Group Projects
- MobyMax
- LinkIt
- Rocket Math
- Intervention Central
- Do to Learn
- Differentiation Strategies for Math

- Discovery Education Math
- Everyday Mathematics
- Homework Spot
- Flash Card Math
- Math Fact Fluency

Tier I:

- Progress Monitoring/Data Tracking
- EnVision Math "Error Intervention" resource
- Visual Learning examples
- Working Backward problem solving EnVision Math resource
- Flash Cards
- Brain Pop
  Extended Time
- Flexible Grouping
- Centers/Small Group Instruction
- Peer Buddies
- MobyMax
- LinkIt!
- Rocket Math
- Intervention Central
- Do to Learn
- Learning Ally
- Xtramath
- Differentiation Strategies for Math
- Discovery Education Math
- Everyday Mathematics
- Homework Spot
- Flash Card Math
- Math Fact Fluency
- EnVision Math Reteach resource

Tier II:

- EnVision Math Daily Assessment Resource
- Differentiated Instruction assignments through EnVision Math
- MobyMax
- Rocket Math
- Xtramath
- Flash Cards

Tier III:

- Intense Interventions to accelerate progress EnVision Math resource
- Focus Math
- Systematic Assessments to focus on specific deficits

ELL:

- EnVision Math resources available in Spanish
- Letters to Parents are available in the Resources by Chapter book to assist in guiding parents through each chapter and offer helpful suggestions they can use to demonstrate mathematical concepts for their child in daily activities. These letters are editable so teachers can customize them.
- Student Dynamic eBook Audio has the option to be read in English or Spanish
- Multi-Language Glossary for new Math vocabulary is available in 14 different languages.
- Audio version is available in English or Spanish.
- Game Closet can be accessed in English or Spanish, while also allowing for all students to play and understand these educational games.
- ELL Notes included in Teacher Edition to help teachers overcome obstacles.
- Record & Practice Journal available in Spanish.
- Student Journal available in Spanish.
- Chapter Reviews available in English and Spanish.
- Vocabulary Flash Cards
- Chunking Information
- Math Word Wall/Word Bank
- Multi-Sensory Instruction
- Use of Translation software
- Gradual Release Model
- TODOS: Mathematics for ALL - Excellence and Equity in Mathematics
- FABRIC - A Learning Paradigm for ELLs (NJDOE resource)

SPED:

- Menu Math (mostly for very low functioning students)
- MobyMax
- LinkIt!
- Xtramath
- Learning Ally (audio version for textbooks and other published materials) – Also available for 504 students
- Use of specialized equipment such as beeping balls, text to speech and speech to text software, special seats or desks
- Use of hands-on materials for problem solving
- Visual supports and Use of manipulatives
- Extended time to complete tests and assignments
- Graphic Organizers/Study Guides

- Mnemonic tricks to improve memory
- Reducing workload
  Centers/Small Group Instruction
- Adjusting accountability for standards by focusing only on essential standards
- Use of IPads or laptops for students with motor issues that make writing difficult
- Use of tangible rewards (certificates, small toys, etc. per behavior plan)
- Use prompts and model directions/assignments
- Use task analysis to break down activities and lessons into each individual step needed to complete the task
- Use concrete examples to teach concepts
- Have student repeat/rephrase written directions
- Provide multi-sensory, hands-on materials for instruction
- Chunking Information
- Modify all fine motor tasks for example: (fat crayons, pencil grip, adaptive scissors)
- Functional or practical emphasis

504:

- Learning Ally (audio version for textbooks and other published materials)
- Extra Practice & Help opportunities
- Reduce workload
- Partial credit
- Allow use of calculator, when appropriate
- Modified length and time frame of assignments
- Alternate assessments with extended time
- Provide guided notes and study guides as needed (use interactive notebook)
- Preferential Seating
- Directions repeated, clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Use of manipulatives

Unit 3 MATH 3RD GRADE		
Content & Practice Standards	**Interdisciplinary Standards**	**Critical Knowledge & Skills**
• **3.NF.A.3**. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1;*	• RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	Concept(s):

recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram	• RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. • SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally • RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. • SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	• Wholes, when partitioned into equal parts, contain parts representing a unit fraction and each part is the same size. • Each part has the same name and represents a unit fraction (one-half, one-third, one-fourth, one-sixth, one-eighth). • The denominator is the total number of parts in the whole. • The numerator is the number of parts in a given fraction. • Fraction 1/*b* is the quantity formed by 1 part when a whole is partitioned into *b* equal parts. • Fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b* (e.g. 10/2 is 10 parts and each part is of size ½). Students are able to: • partition rectangles, and other shapes, into halves, thirds, fourths, sixths and eighths. • identify the fractional name of each part. • model and explain that a fraction *a*/*b* is the quantity formed by *a* parts of size 1/*b* (For example, 10/2 is 10 parts and each part is of size ½). Learning Goal: Partition shapes into parts with equal areas and express the area of each part as a unit fraction; interpret the unit fraction 1/b as the quantity formed by 1 of b equal parts of a whole and the fraction a/b as the quantity formed by a parts of size 1/b.

● **3.MD.A.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. (e.g., by representing the problem on a number line diagram) ● **3.MD.A.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.		Concept(s): ● Analog clocks represent hours as numbers and minutes are represented as tick marks. Students are able to: ● tell time to the nearest minute using digital and analog clocks. ● write time to the nearest minute using analog clocks. ● choose appropriate strategies to solve real world problems involving time. ● use the number line as a visual model to determine intervals of time as *jumps* on a number line. ● measure time intervals. Learning Goal:: Tell and write time to the nearest minute, and solve word problems with addition and subtraction involving time intervals in minutes. Concept(s): ● Mass may be measured in grams and kilograms. ● Mass is measured by weighing. ● Volume may be measured in liters. ● Volume may be measured with instruments such as beakers. Students are able to: ● measure and read a scale to estimate volume. ● measure and read a scale to estimate mass. ● add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes.

		Learning Goal 7: Solve one step word problems by estimating and measuring volume and mass using appropriate tools and standard units of grams, kilograms, and liters.
● **3.G.A.1** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals.		Concept(s): ● Shapes in different categories share attributes. ● Quadrilaterals are closed figures with four sides. ● Rhombuses, rectangles, etc, and other quadrilaterals share attributes. Students are able to: ● classify and sort shapes by attributes. ● explain why rhombuses, rectangles, and squares are examples of quadrilaterals. ● draw examples of quadrilaterals. Learning Goal 9: Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
● **3.MD.D.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.		Concept(s): ● Perimeter of a figure is equivalent to the sum of the length of all of the sides. ● Rectangles that have same perimeter can have different areas. ● Rectangles that have same area can have different perimeters. Students are able to:

		• determine the perimeter of various plane shapes and irregular shapes given the side lengths. • determine the unknown side length give the perimeter and other sides. • show rectangles having the same perimeter and different areas. • show rectangles having different perimeters and the same area. Learning Goal 10: 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.
• **3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *(benchmarked)	• RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. • RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.	Concept(s): • Letters or symbols in an equation represent an unknown quantity. Students are able to: • represent the solution to two-step word problems with equations. • use a symbol to represent an unknown in an equation. • use rounding as an estimation strategy. • explain, using an estimation strategy, whether an answer is reasonable.

	• SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally • RL.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. • SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	Learning Goal 6: Write equations when solving two-step word problems, using a symbol for an unknown; find the value of an unknown in an equation involving any of the four operations and use estimation strategies to assess the reasonableness of answers.

Unit 3 MATH 3RD GRADE

Stage 1 – Desired Results

UNIT SUMMARY	CORE AND SUPPLEMENTAL MATERIALS/RESOURCES
Unit 3 focuses on working with fractions, measurement, estimation, and geometric shapes. Unit 3 also continues developing number sense and application to solve problems involving the four operations, time, money, and measurement.	• Pearson Envision • MobyMax

UNDERSTANDINGS

Students will understand that a whole can be broken down into smaller parts.
Students will understand that you can measure time, length, mass, and capacity.
Students will understand geometrical shapes and their attributes.

Students will have understanding of number sense to solve problems involving the four operations

Students will know…	**Students will be able to…**
What content will be covered that students must master? ● Find and represent equivalent fractions on a number line ● Use models,benchmark numbers, and number lines to compare fractions ● Solve problems involving measurement and estimation ● Reason with shapes and their attributes ● Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures ● Solve problems involving the four operations and identify	*What should students be able to accomplish to demonstrate understanding?* ● partition a number line into parts of equal sizes between 0 and 1 (halves, thirds, fourths sixths and eighths). ● plot unit fractions on the number line. ● identify multiple parts (of length 1/b) on the number line. ● plot a fraction on the number line by marking off multiple parts of size 1/b. ● plot fractions equivalent to whole numbers including 0 and up to 5. ● find equivalent fractions (limited to fractions with denominators 2, 3, 4, 6, and 8). ● explain why two fractions are equivalent; use a visual fraction model to support explanation. ● write whole numbers as fractions. ● identify fractions that are equivalent to whole numbers. ● compare two fractions having the same numerator by reasoning about their size. ● compare two fractions having the same denominator by reasoning about their size. ● explain why comparing fractions that do not have the same whole is not valid (reason about their size and support reasoning with a model). ● use <, =, and > symbols to write comparisons of fractions and justify conclusions with a visual fraction model. ● tell time to the nearest minute using digital and analog clocks. ● write time to the nearest minute using analog clocks. ● choose appropriate strategies to solve real world problems involving time. ● use the number line as a visual model to determine intervals of time as *jumps* on a number line. ● measure time intervals. ● measure and read a scale to estimate volume. ● measure and read a scale to estimate mass. ● add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes. ● classify and sort shapes by attributes. ● explain why rhombuses, rectangles, and squares are examples of quadrilaterals. ● draw examples of quadrilaterals. ● determine the perimeter of various plane shapes and irregular shapes given the side lengths.

	● determine the unknown side length and find the perimeter. ● show rectangles having the same perimeter and different areas. ● show rectangles having different perimeters and the same area. ● represent the solution to two-step word problems with equations. ● use a symbol to represent an unknown in an equation. ● use rounding as an estimation strategy. ● explain, using an estimation strategy, whether an answer is reasonable.

Stage 2 – Assessment Evidence

Performance Tasks: **Performance Tasks/Use of Technology** ● www.pearsonrealize.com ● www.linkit.com ● www.mobymax.com	Other Evidence: **Formative** ● exit tickets ● show me/tell me ● math journals ● MobyMax assignments ● daily work ● student conferences ● teacher observation **Summative** *Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.* ● benchmark testing ● LinkIt! district assessment ● MobyMax assessments

Stage 3 – Learning Plan

Topic 13: Fractions Equivalence and comparison

- *Find and represent equivalent fractions on a number line*
- *Use models such as fraction strips to compare fractions that refer to the same whole and have the same denominator*
- *Use models such as fraction strips to compare fractions that refer to the same whole and have the same numerator*
- *Use benchmark numbers to compare fractions*
- *Use a number line to compare fractions*
- *Use fraction names to represent whole numbers*
- *Construct math arguments using fractions*

Topic 14: Solve time, capacity, mass problems

- *Show and tell time to the nearest minute using analog and digital clocks*
- *tell and write time to the nearest minute and measure time intervals in minutes*
- *solve word problems involving addition and subtraction to measure quantities of times.*
- *Use standard units to estimate liquid volume*

- *Use standard units to estimate liquid volume*
- *USe standard units to estimate the masses of solid objects*
- *Use a pan balance with metric weights to measure the mass of objects in grams and kilograms*
- *Use pictures to help solve problems about mass and volume*
- *Make sense of quantities and relationships in problems*

Topic 15: Attributes of two dimensional shapes

- *Identify quadrilaterals and use attributes to describe them*
- *Classify shapes according to their attributes*
- *Analyze and compare quadrilaterals and group them by their attributes*
- *Solve math problems precisely, efficiently, and accurately by using appropriate tools and mathematics vocabulary*

Topic 16: Solve perimeter problems

- *Find the perimeter of different polygons*
- *Find the perimeter of different polygons with common shapes*
- *Use the given sides of a polygons and the known perimeter to find the unknown side length*
- *Understand the relationship of shapes with the same perimeter and different areas*
- *Understand the relationship of shapes with the same area and different perimeters*
- *Understand the relationship between numbers in order to simplify and solve problems involving perimeter*
-

Topic 11: Use operations with whole numbers to solve problems.

- *Daw diagrams and write equations to solve two step problems involving addition and subtraction of whole numbers*
- *Draw diagrams and write equations to solve two step problems involving multiplication and division of whole numbers*
- *Examine relationships between quantities in a two step word problem by writing equations. Choose and apply the operation needed to find the answer*
- *Critique the reasoning of others by asking questions, identifying mistakes, and providing suggestions for improvement*

Student's final performance is based on applying the fundamentals of equivalent fractions, comparing fractions, solving problems using time, capacity and mass, analyzing quadrilaterals and using whole numbers to solve perimeter. This will be assessed through formative and summative tasks. The criteria is based on district assessments, as well as assessments through Pearson Realize Envision.

• Hook the student through engaging and provocative entry points: thought-provoking and focusing experiences, issues, oddities, problems, and challenges that point toward essential questions, core ideas, and final performance tasks using quadrant D real life experiences, STEAM, and technology.

• Explore and Equip. 21st Century Learning and Interdisciplinary connections. Engage students in learning experiences that allow them to explore the big ideas and essential questions; that cause them to pursue leads or hunches, research and test ideas, try things out. Equip students for the final performances through guided instruction and coaching on needed skill and knowledge. Have them experience the ideas to make them real.

•Organize and sequence the learning for maximal engagement and effectiveness, given the desired results.

Planned Differentiation & Interventions for Tiers I, II, III, ELL, SPED, and Gift & Talented Students

• Rethink and revise. Dig deeper into ideas at issue (through the faces of understanding). Revise, rehearse, and refine, as needed. Guide students in self-assessment and self-adjustment, based on feedback from inquiry, results, and discussion.

• Evaluate understandings. Reveal what has been understood through final performances and products. Involve students in a final self-assessment to identify remaining questions, set future goals, and point toward new units and lessons.

•Tailor (personalize) the work to ensure maximum interest and achievement. Differentiate the approaches used and provide sufficient options and variety (without compromising goals) to make it most likely that all students will be engaged and effective.

Gifted & Talented:

- "Differentiating the Lesson" in EnVision Math online resources for all sections
- "Additional Topics" in EnVision Math online resources to extend and enhance instruction
- Advanced Center Activities from EnVision Math
- Design Challenges
- Student Choice/Driven Activities
- Group Projects
- MobyMax
- LinkIt
- Rocket Math
- Intervention Central
- Do to Learn
- Differentiation Strategies for Math
- Discovery Education Math
- Everyday Mathematics

- Homework Spot
- Flash Card Math
- Math Fact Fluency

Tier I:

- Progress Monitoring/Data Tracking
- EnVision Math "Error Intervention" resource
- Visual Learning examples
- Working Backward problem solving EnVision Math resource
- Flash Cards
- Brain Pop
  Extended Time
- Flexible Grouping
- Centers/Small Group Instruction
- Peer Buddies
- Math Tutoring Center (HS only)
- Math Lab/Tutorial
- MobyMax
- LinkIt!
- Rocket Math
- Intervention Central
- Do to Learn
- Learning Ally
- Xtramath
- Differentiation Strategies for Math
- Discovery Education Math
- Everyday Mathematics
- Homework Spot
- Flash Card Math
- Math Fact Fluency
- EnVision Math Reteach resource

Tier II:

- EnVision Math Daily Assessment Resource
- Differentiated Instruction assignments through EnVision Math
- MobyMax
- Rocket Math
- Xtramath

- Flash Cards

Tier III:

- Intense Interventions to accelerate progress EnVision Math resource
- Focus Math
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