Winslow Schools
Mathematics Curriculum – Grade 3
Unit 1

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 1 **Multiplication, Division and Concepts of Area**	● 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 ● 3.NBT.A.1 ● 3.NBT.A.3	● 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 (Geometric measurement) ● Use place value understanding and properties of operations to perform multi-digit arithmetic	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and 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.
Unit 1: Suggested Open Educational Resources	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.NBT.A.1 Rounding to 50 or 500 3.NBT.A.1 Rounding to the Nearest Ten and Hundred 3.NBT.A.3 How Many Colored Pencils?		

Major Supporting Additional (Identified by PARCC Model Content Frameworks).

Curriculum Unit 1	Standards		Pacing	
			Days	**Unit Days**
Unit 1 **Multiplication, Division and Concepts of Area**	• 3.OA.A.1	Interpret products of whole numbers as repeated addition and as the total number of objects (up to 100) in equal groups or arrays.	4	45
	• 3.OA.A.2 •	Interpret the quotient as a set of objects (up to 100) partitioned equally into a number of shares and as the number of equal shares.	4	
	• 3.OA.A.3*	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	6	
	• 3.OA.A.4	Determine the unknown in a division or multiplication equation relating 3 whole numbers (within 100).	6	
	• 3.OA.B.6	Solve division of whole numbers by representing the problem as an unknown factor problem.	2	
	• 3.MD.C.5	Measure areas by counting unit squares (cm^2, m^2, in^2, ft^2, and improvised units).	6	
	• 3.MD.C.6 •	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.	2	
	• 3.MD.C.7a-b	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.	4	
	• 3.NBT.A.1	Round whole numbers to the nearest 10 or 100.	4	
	• 3.NBT.A.3	Multiply one digit whole numbers by multiples of 10 (10-90).	4	
	Assessment, Re-teach and Extension		3	

Unit 1 Grade 3		
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
● 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.	MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	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 1: Interpret products of whole numbers as repeated addition and as the total number of objects (up to 100) in equal groups or arrays.
● 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 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.	MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	Concept(s): ● 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 2: Interpret the quotient as a set of objects (up to 100) partitioned equally into a number of shares and as the number of equal shares.

● 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. *(benchmarked)	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics.	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 3: 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 $8 \times ? = 48$, $5 = \div 3$, $6 \times 6 = ?$.	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): ● Equal sign indicates that the value of the numerical expressions on each side are the same. ● Unknown in an equation ($4 \times \_\_ = 20$ and $20 = ? \times 4$) 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 4: 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 $32 \div 8$ by finding the number that makes 32 when multiplied by 8.	MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure.	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 factor. Learning Goal 5: 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.	MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	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.

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).		● 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 6: 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. 3.MD.C.7a. 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. 3.MD.C.7b. Multiply side lengths to find areas of rectangles 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.	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	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 7: 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.

● 3.NBT.A.1. Round whole numbers to the nearest 10 or 100.	MP 2 Reason abstractly and quantitatively.	Concept(s): ● Rounding leads to an approximation or estimate. Students are able to: ● use number lines and a hundreds charts to explain rounding numbers to the nearest 10 and 100. ● round a whole number to the nearest 10. ● round a whole number to the nearest 100. Learning Goal 8: Round whole numbers to the nearest 10 or 100.
● 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.	MP 2 Reason abstractly and quantitatively.	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. Learning Goal 9: Multiply one digit whole numbers by multiples of 10 (10-90).

Unit 1 Grade 3	
School/District Formative Assessment Plan	**School/District Summative Assessment Plan**

Pre-Assessment, Quizzes
Do Nows
Exit Tickets
Daily Monitoring
Lesson Check Assessments:
    ●   Teacher constructed responses
    ●   Provided by Textbook or online resource
	Go Math! Unit Benchmarks
	Link It
	Mid-Chapter Checkpoints
	Chapter Tests:
	    ● Online Assessments
	    ● Textbook Review/Test

Focus Mathematical Concepts

Prerequisite skills:
Achieve the Core Coherence Map
https://achievethecore.org/coherence-map/

Standard:
3.OA.A.1:   2.OA.4, 2.NBT.2, 2.G.2
3.OA.A.2:   2.OA.1, 3.OA.1
3.OA.A.3:   3.OA.1, 3.OA.2
3.OA.A.4:   3.OA.1, 3.OA.2, 3.OA.3
3.OA.B.6:   2.NBT.5, 3.OA.1, 3.OA.2, 3.OA.4, 3.OA.5
3.MD.C.5:   K.G.3, 1.MD.2, 1.G.2, 2.MD.1
3.MD.C.6:   2.G.2, 3.MD.5
3.MD.C.7a,b: 2.G.2, 3.OA.3, 3.OA.7, 3.MD.5, 3.MD.6
3.NBT.A..1:   2.NBT.1, 2.NBT.4
3.NBT.A.3:   2.NBT.1

Common Misconceptions:
3.OA.A.1 - 3.OA.A.4:
Students think a symbol (? or []) is always the place for the answer. This is especially true when the problem is written as $15 \div 3 =$? or $15 = x\ 3$. Students also think that $3 \div 15 = 5$ and $15 \div 3 = 5$ are the same equations. The use of models is essential in helping students eliminate this understanding. The use of a symbol to represent a number once cannot be used to represent another number in a different problem/situation. Presenting students with multiple situations in which they select the symbol and explain what it represents will counter this misconception.

3.MD.C.5:
Students may confuse perimeter and area when they measure the sides of a rectangle and then multiply. They think the attribute they find is length, which is perimeter. Pose problems situations that require students to explain whether they are to find the perimeter or area.

3.NBT.A..1
The use of terms like "round up" and "round down" confuses many students. For example, the number 37 would round to 40 or they say it "rounds up". The digit in the tens place is changed from 3 to 4 (rounds up). This misconception is what causes the problem when applied to rounding down. The number 32 should be rounded (down) to 30, but using the logic mentioned for rounding up, some students may look at the digit in the tens place and take it to the previous number, resulting in the incorrect value of 20. To remedy this misconception, students need to use a number line to visualize the placement of the number and/or ask questions such as: "What tens are 32 between and which one is it closer to?"Developing the understanding of what the answer choices are before rounding can alleviate much of the misconception and confusion related to rounding. Students may round numbers incorrectly because they do not look at the place to the immediate right of the place being rounded. Have students circle the place to which they are rounding and underline the number to the immediate right before rounding.

Number Fluency:
3.OA.7 Students fluently multiply and divide within 100. By the end of grade 3, they know all products of two one-digit numbers from memory.
3.NBT.2 Students 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.

Think Central Online Resource: Strategies and Practice for Skills and Facts Fluency

Achieve the Core – GoMath Fluency Activities
https://achievethecore.org/page/2853/go-math-k-5-guidance-documents

Achieve the Core – Fluency Activities
https://achievethecore.org/page/2948/fluency-resources-for-grade-level-routines

Xtra Math
https://xtramath.org/#/signin/student_other

Engage NY Sprints
https://www.saugerties.k12.ny.us/site/handlers/filedownload.ashx?moduleinstanceid=9558&dataid=14912&FileName=G3-M1-SPRINTS-FINAL.pdf

Math Coach – Fact Fluency http://schoolwires.henry.k12.ga.us/Page/21865
Math Wire – Basic Facts Link http://mathwire.com/numbersense/bfactslinks.html
Math Fact Practice http://www.playkidsgames.com/games/mathfact/mathFact.htm

District/School Tasks	District/School Primary and Supplementary Resources
NJDOE Digital Item Library https://nj.digitalitemlibrary.com/home **NJSLA Mathematics Evidence Statements** https://docs.google.com/spreadsheets/d/18M5r1jk4P729fTpAlWAzrw1gE6tken233I-Yk0U712M/edit#gid=554025491 **LinkIt! Form A, B, & C**	Text – Go Math Think Central Online Resources: https://www.-k6.thinkcentral.com/ePC/start.do Go Math- Strategic Intervention Teacher Activity Guide HMH Getting Ready for the PARCC Assessments Go Math Chapter Resources ● Chapter 1 ● Chapter 3 ● Chapter 4 **3rd grade Flip Book:** http://community.ksde.org/Default.aspx?tabid=5646 **North Carolina Dept of Ed. Wikispaces:** http://maccss.ncdpi.wikispaces.net/Elementary **PARCC Math Resources** http://www.parcc-assessment.org/assessments/test-design/mathematics/math-test-specifications-documents **101 Math Discourse Questions:** http://www.casamples.com/downloads/100MathDiscourseQuestions_Printable.pdf **Asking Effective Questions** http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_AskingEffectiveQuestions.pdf
Instructional Best Practices	
1. Identifying similarities and differences 2. Summarizing and note taking 3. Reinforcing effort and providing recognition 4. Homework and practice 5. Nonlinguistic representations	6. Cooperative learning 7. Setting objectives and providing feedback 8. Generating and testing hypotheses 9. Cues, questions, and advance organizers 10. Manage response rates

Vocabulary

3.OA.A.1, 2, 3, & 4
Represent and solve problems involving multiplication and division.
operations, multiplication, division, factor, product, quotient, partitioned equally, equal shares, number of groups, number in the groups, array, equation, unknown, expression

3.OA.B.6
Understand properties of multiplication and the relationship between multiplication and division.
operation, multiply, divide, factor, product, quotient, dividend, divisor, strategies, unknown, (properties)-rules about how numbers work
3.MD.C.5, 6, & 7
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
attribute, area, square unit, plane figure, gap, overlap, square cm, square m , square in., square ft, nonstandard units, tiling, side length, decomposing

3.NBT.A.1 & 3
Use place value understanding and properties of operations to perform multi-digit arithmetic.
place value, round, addition, add, addend, sum, subtraction, subtract, difference, strategies, Associative, Commutative, Identity (properties)-rules about how numbers work

9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, Preparation and Training & 9.4 Life Literacies and Key Skills

9.4.5.CI.3: Participate in brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
9.4.5.IML.1: Evaluate digital sources for accuracy, perspective, credibility and relevance (e.g., Social Studies Practice - Gathering and Evaluating Sources).
9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
9.4.5.IML.3: Represent the same data in multiple visual formats in order to tell a story about the data.

The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.: Additional opportunities to address 9.1, 9.2 & 9.4:

Philadelphia Mint

https://www.usmint.gov/learn/kids/resources/educational-standards

Different ways to teach Financial Literacy.

https://www.makeuseof.com/tag/10-interactive-financial-websites-teach-kids-money-management-skills/

Suggested Modifications for Special Education/504

Students with special needs: The students' needs will be addressed on an individual and grade level using a variety of modalities. Accommodations will be made for those students who need extra time to complete assignment. Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all   students as teaching strategies are considered.

☐ Provide the opportunity to re-take tests
☐ Modify activities/assignments/projects/assessments
☐ Breakdown activities/assignments/projects/assessments into manageable units
☐ Additional time to complete activities/assignments/projects/assessments
☐ Provide an option for alternative activities/assignments/projects/assessments
☐ Modify Content
☐ Modify Amount
☐ Small Group Intervention/Remediation

☐ Individual Intervention/Remediation
☐ Additional Support Materials
☐ Guided Notes
☐ Graphic Organizers
☐ Adjust Pacing of Content
☐ Increase one on one time
☐ Peer Support
☐ Other Modifications for Special Education:
- Think Central Online Resources:
  - Reteach
  - Strategic Intervention
  - Intensive Intervention Skill Pack
  - Response to Intervention Activities

Suggested Modifications for At-Risk Students

Formative and summative data will be used to monitor student success. At first signs of failure, student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations

☐ Provide the opportunity to re-take tests
☐ Increase one on one time
☐ Oral prompts can be given
☐ Using visual demonstrations, illustrations, and models
☐ Give directions/instructions verbally and in simple written format
☐ Peer Support
☐ Modify activities/assignments/projects/assessments
☐ Additional time to complete activities/assignments/projects/assessments
☐ Provide an option for alternative activities/assignments/projects/assessments

☐ Modify Content
☐ Modify Amount
☐ Adjust Pacing of Content
☐ Small Group Intervention/Remediation
☐ Individual Intervention/Remediation
☐ Additional Support Materials
☐ Guided Notes
☐ Graphic Organizers
☐ Other Modifications for Students At-Risk:
- Think Central Online Resources:
  - Reteach
  - Strategic Intervention
  - Intensive Intervention Skill Pack
  - Response to Intervention Activities

English Language Learners	Suggested Modifications for Gifted Students
All WIDA Can Do Descriptors can be found at this link: https://wida.wisc.edu/teach/can-do/descriptors ☐ Grades 2-3 WIDA Can Do Descriptors: 　　☐ Listening ☐ Speaking 　　☐ Reading ☐ Writing 　　☐ Oral Language Students will be provided with accommodations and modifications that may include: • Relate to and identify commonalities in mathematics studies in student's home country • Assist with organization • Use of computer • Emphasize/highlight key concepts • Teacher Modeling • Peer Modeling • Label Classroom Materials - Word Walls	Students excelling in mastery of standards will be challenged with complex, high level challenges related to the topic. • Raise levels of intellectual demands • Require higher order thinking, communication, and leadership skills • Differentiate content, process, or product according to student's readiness, interests, and/or learning styles • Provide higher level texts • Expand use of open-ended, abstract questions • Critical and creative thinking activities that provide an emphasis on research and in-depth study • Enrichment Activities/Project-Based Learning/ Independent Study Additional Strategies may be located at the links: ❖ Gifted Programming Standards ❖ Webb's Depth of Knowledge Levels and/or Revised Bloom's Taxonomy ❖ REVISED Bloom's Taxonomy Action Verbs

Suggested Activities			
☐ Do Now/Warm-Up ☐ Whole Group ☐ Small Groups ☐ Guided Practice ☐ Independent Practice	☐HMH Getting Ready for the PARCC Assessments ☐Go Math Concepts Readers ☐Go Math Stem Activities ☐Mega Math- Think Central Online Resource ☐Go Math Animated Math Models ☐Go Math Grab and Go Activity Center Cards ☐Math on the Spot Video Tutorials- Think Central Online Resource ☐Go Math! Personal Math Trainer	☐ Centers ☐ Intervention/Remediation ☐ Projects ☐Link It Library	☐Academic Games ☐ Other Suggested Activities: 　☐Khan Academy 　☐Brain Pop Jr. 　☐Prodigy 　☐Kahoot

Interdisciplinary Connections
Go Math Grab and Go! Activities (Reading, Science, Math, Social Studies)
Go Math Real World Project: Big Idea, Numbers in Base Ten and Operations and Algebraic Thinking (Math, Reading, Writing, Science, Social Studies)
Go Math Cross-Curricular Science and Social Studies questions, experiments, and activities embedded throughout the chapter.

Integration of Computer Science and Design Thinking NJSLS 8
8.1.5.CS.1: Model how computing devices connect to other components to form a system.
8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods.
8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.
8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.