Winslow Schools
Mathematics Curriculum - Grade 2
Unit 4

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 4 **Reason with Shapes and Represent Data**	• 2.G.A.1 • 2.G.A.3 • 2.MD.C.8 • 2.MD.D.9 • 2.MD.D.10 • 2.OA.B.2* • 2.NBT.B.5*	• Reason with shapes and their attributes • Work with money • Represent and interpret data • Add and subtract within 20 • Use place value understanding and properties of operations to add and subtract	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 4: Suggested Open Educational Resources	2.MD.C.8 Delayed Gratification 2.MD.D.9 Hand Span Measures 2.MD.D.9 The Longest Walk 2.MD.D.10 Favorite Ice Cream Flavor 2.NBT.B.5 Saving Money 1 2.NBT.B.5 Saving Money 2		

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

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Curriculum Unit 4	Standards		Pacing	
			Days	Unit Days
Unit 4 **Reason with Shapes and Represent Data**	• 2.G.A.1	Draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	5	45
	• 2.G.A.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, and four fourths.	5	
	• 2.MD.C.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.	9	
	• 2.MD.D.9	Use tools of measurement to measure lengths of several objects to the nearest whole unit and represent the data on a line plot with appropriate whole number units on the horizontal scale.	3	
	• 2.MD.D.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph.	6	
	• 2.OA.B.2*	Fluently add and subtract within 20 using mental strategies.	5	
	• 2.NBT.B.5*	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	6	
	Assessment, Re-teach and Extension		6	

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Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
● 2.G.A.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	MP 2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: ● draw shapes having specified attributes (e.g. number of equal faces, number of angles) ● identify triangles, quadrilaterals, pentagons, hexagons, and cubes. Learning Goal 1: Draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
● 2.G.A.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): ● Equal shares of identical wholes need not have the same shape. Students are able to: ● partition rectangles into two, three, or four equal shares. ● partition two same-sized rectangles to show that equal shares of identical wholes need not have the same shape. ● describe the shares using the words halves, thirds, fourths, half of, a third of, a fourth of, etc. ● recognize and then describe the whole as two halves, three thirds, four fourths. Learning Goal 2: Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, and four fourths.

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• 2.MD.C.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Know the value of dollar bills, quarters, dimes, nickels, and pennies. Students are able to: • identify dollar bills, quarters, dimes, nickels, and pennies. • using dollar bills, quarters, dimes, nickels, and pennies, count to determine the total amount of money. • solve word problems involving dollar bills, quarters, dimes, nickels, and pennies. Learning Goal 3: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.
• 2.MD.D.9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Generate data. Students are able to: • generate measurement data by measuring lengths, to the nearest whole unit, of several objects or by making repeated measurements of the same object. • record the measurements in a line plot having a horizontal scale in whole number units. Learning Goal 4: Use tools of measurement to measure lengths of several objects to the nearest whole unit and represent the data on a line plot with appropriate whole number units on the horizontal scale.
• 2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • draw a picture graph to represent a data set with up to four categories. • draw a bar graph to represent a data set with up to four categories. • use information in a bar graph to solve simple put together, take apart, and compare problems. Learning Goal 5: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph.

● 2.OA.B.2. Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers.* *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: ● add within 20 using mental strategies with accuracy and efficiency. ● subtract within 20 using mental strategies with accuracy and efficiency. Learning Goal 6: Fluently add and subtract within 20 using mental strategies.
● 2.NBT.B.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: ● with accuracy and efficiency, add and subtract within 100 using place value strategies, properties of operations and/or the relationship between addition and subtraction. Learning Goal 7: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

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School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
Pre-Assessment, Quizzes Exit Tickets Daily Monitoring Interactive Notebook Math Portfolio Go Math Mid Chapter Checkpoint Go Math Show What You Know Go Math Quick Checks	Link It Chapter Assessments Go Math Performance Assessment Task

Focus Mathematical Concepts

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

Standards:
2.G.A.1: 1.G.1
2.G.A.3: 1.G.3
2.MD.C.8:
2.MD.D.9: 1.MD.4
2.MD.D.10: 1.MD.4
2.OA.B.2: 1.OA.6
2.NBT.B.5: 1.NBT.4

Common Misconceptions:

2.G.A.1: Some students may think that a shape is changed by its orientation. They may see a rectangle with the longer side as the base, but claim that the same rectangle with the shorter side as the base is a different shape. This is why is it so important to have young students handle shapes and physically feel that the shape does not change regardless of the orientation, as illustrated below.

If students are only shown equilateral triangles then when they see scalene or isosceles triangles, they do not recognize them as triangles even though they have three sides. So you must make sure you are always showing students various types of shapes and not just the regular shapes that they see in pattern blocks and on posters.

2.MD.C.8: Sometimes students will record twenty-nine dollars as 29$. Remind them that the dollar sign goes in front. The cent sign goes after the number and there is no decimal point used with the cent sign nor can both signs be used in the same amount.

Students might over-generalize the value of coins when they count them. They might count them as individual objects. Also some students think that the value of a coin is directly related to its size, so the bigger the coin, the more it is worth.

Place pictures of a nickel on the top of five-frames that are filled with pictures of pennies. In like manner, attach pictures of dimes and pennies to ten-frames and pictures of quarters to 5 x 5 grids filled with pennies. Have students use these materials to determine the value of a set of coins in cents.

2.MD.D.9 & 2.MD.D.10 The attributes for the same kind of object can vary. This will cause equal values in an object graph to appear unequal. For example, when making an object graph using shoes for boys and girls, five adjacent boy shoes would likely appear longer than five adjacent girl shoes. To standardize the objects, place the objects on the same-sized construction paper or sticky-note, then make the object graph.

Number Fluency:

2.OA.A.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

2.OA.B.2. Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers.*

2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.B.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

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

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**

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District/School Tasks	District/School Primary and Supplementary Resources
Examples of CCSS Items - Delaware Comparison Document **Delaware DOE Common Core Item Bank for Mathematics – Grade 2** **http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_2-Nov.pdf**	Text – Go Math **North Carolina Dept of Ed. Wikispaces:** http://maccss.ncdpi.wikispaces.net/Elementary **Flip Book** http://community.ksde.org/Default.aspx?tabid=5646 **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 **Think Central** https://www-k6.thinkcentral.com/ePC/viewResources.do?method=retrieveResources&pageName=resourcepage **Xtra Math** https://xtramath.org/#/home/index **Prodigy** https://www.prodigygame.com/Play/
Instructional Best Practices and Exemplars	
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

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Vocabulary	
2.G.A.1 **Reason with shapes and their attributes.** attribute, feature, angle, side, triangle, quadrilateral, square, rectangle, trapezoid, pentagon, hexagon, cube, face, edge, vertex, surface, figure, shape, closed, open 2.G.A.3 **Reason with shapes and their attributes.** partition, equal size, equal shares, half, halves, thirds, half of, a third of, whole, two halves, three thirds, four fourths, rows, columns From previous grades: circle, square, sphere, half-circle, quarter-circle, cone, prism, cylinder, trapezoid 2.MD.C.8 **Work with time and money.** quarter, dime, nickel, dollar, cent(s), $, ¢, heads, tails	2.MD.D.9 & 10 **Represent and interpret data.** collect, organize, display, show, data, attribute, sort, line plot, picture graph, bar graph, question, category, chart, table, most, least, more than, less than, about, same, different, measure, inch, foot, yard, centimeter, meter, length 2.OA.B.2 **Add and subtract within 20.** add, subtract, sum, more, less, equal, equation, putting together, taking from, taking apart, addend 2.NBT.B.5 **Use place value understanding and properties of operations to add and subtract.** fluent, compose, decompose, place value, digit, ten more, ten less, one hundred more, one hundred less, add, subtract, sum, equal, addition, subtraction

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9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, and Preparation and Training, 9.4 Life Literacies and Key Skills
9.1.2.FP.1 Explain how emotions influence whether a person spends or saves 9.1.2.FP.2 Differentiate between financial needs and wants 9.1.2.PB.1 Determine various ways to save and places in the local community that help people save and accumulate money over time 9.1.2.PB.2 Explain why an individual would chose to save money 9.2.2.CAP.1 Make a list of different types of jobs and describe the skills associated with each job 9.2.2.CAP.3 Define entrepreneurship and social entrepreneurship 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:

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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:

English Language Learners

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

Suggested Modifications for Gifted Students

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

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Suggested Activities	
☐ Do Now/Warm-Up ☐ Whole Group ☐ Small Groups ☐ Guided Practice ☐ Independent Practice ☐ Daily 5	☐ CAFÉ ☐ Centers ☐ Intervention/Remediation ☐ Projects ☐Academic Games ☐ Other Suggested Activities:

Interdisciplinary Connections

Go Math Big Idea Vocabulary Reader: A Farmer's Job (Math, Reading, Writing, Science)

Go Math Real World Project: My Math Project Storybook "At the Farm Stand" (Social Studies)

Go Math ThinkCentral STEM Activities (Science)

Go Math Cross-Curricular Science and Social Studies questions, experiments, and activities embedded throughout the chapter

Integration of Computer Science and Design Thinking

8.2.2.ITH.3 Identify how technology impacts or improves life.
8.2.2.ITH.4 Identify how various tools reduce work and improve daily tasks.
8.1.2.NI.1 Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.
8.1.2.NI.2 Describe how the internet enables individuals to connect with others worldwide.
8.1.2.CS.3 Describe basic hardware and software problems using accurate terminology.