Winslow Schools
Mathematics Curriculum - Grade 4
Unit 1

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 1 **Place Value & Operations with Whole Numbers**	● 4.OA.B.4 ● 4.OA.C.5 ● 4.MD.A.1 ● 4.OA.A.1 ● 4.OA.A.2 ● 4.NBT.A.1 ● 4.NBT.A.2 ● 4.NBT.A.3	● Gain familiarity with factors and multiples ● Generate and analyze patterns ● Solve problems involving measurement and conversion of measurements ● Use the four operations with whole numbers to solve problems ● Generalize place value understanding for multi-digit whole numbers	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*	4.OA.B Identifying Multiples 4.OA.B Numbers in a Multiplication Table 4.OA.C.5 Double Plus One 4.MD.A.1 Who is the tallest? 4.OA.A.2 Comparing Money Raised 4.NBT.A.1 Thousands and Millions of Fourth Graders 4.NBT.A.2 Ordering 4-digit numbers 4.NBT.A.3 Rounding on the Number Line		

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

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Curriculum Unit 1		Standards	Pacing	
			Days	**Unit Days**
Unit 1 **Place Value & Operations with Whole Numbers**	● 4.OA.B.4	Find all factor pairs for a whole number up to 100 and determine whether it is a multiple of a given 1-digit whole number and whether it is prime or composite.	6	45
	● 4.OA.C.5	Generate a number or shape pattern that follows a rule and identify features of the pattern that are not explicit in the rule.	4	
	● 4.MD.A.1	Express measurement in a larger unit in terms of a smaller unit and record equivalent measures in a two-column table.	8	
	● 4.OA.A.1	Write multiplication equations from word problems indicating multiplicative comparisons and describe multiplication equations as comparisons.	3	
	● 4.OA.A.2	Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations.	4	
	● 4.NBT.A.1	For a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right.	7	
	● 4.NBT.A.2	Compare two multi-digit whole numbers (up to one million) using >, =, and < for numbers presented as base ten numerals, number names, and/or in expanded form.	4	
	● 4.NBT.A.3	Round multi-digit whole numbers up to one million to any place.	5	
		Assessment, Re-teach and Extension	4	

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Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
● **4.OA.B.4.** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	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): ● Whole numbers are a multiple of each of its factors. ● Prime numbers do not have factors other than 1 and the number itself. Students are able to: ● find all factor pairs for any whole number (between 1 and 100). ● given a one-digit number, determine whether a given whole number (between 1 and 100) is a multiple of the one-digit number. ● determine whether a given whole number (between 1 and 100) is prime or composite. Learning Goal 1: Find all factor pairs for a whole number up to 100 and determine whether it is a multiple of a given 1-digit whole number and whether it is prime or composite.
● **4.OA.C.5.** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *r example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*	MP.8 Look for and express regularity in repeated reasoning.	Concept(s): ● Patterns contain features that are not explicitly stated in the rule defining the numerical pattern. Students are able to: ● produce number patterns from a given rule. ● produce shape patterns from a given rule. ● analyze a sequence of numbers in order to identify features that are not obvious explicitly stated in the rule. Learning Goal 2: Generate a number or shape pattern that follows a rule and identify features of the pattern that are not explicit in the rule.

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● **4.MD.A.1**. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).*	MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): ● Relative sizes of measurements (e.g. a kilometer is 1000 times as long as a meter and 100,000 times as long as a centimeter). Students are able to: ● express measurements of a larger unit in terms of a smaller unit (within a single measurement system) (e.g. convert hours to minutes, kilometers to centimeters, etc). ● generate a two-column table to record measurement equivalents. Learning Goal 3: Express measurement in a larger unit in terms of a smaller unit and record equivalent measures in a two-column table.
● **4.OA.A.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	Concept(s): ● Multiplication equations represent comparisons. Students are able to: ● explain multiplication equations as comparisons. ● write multiplication equations given word problems indicating multiplicative comparison. Learning Goal 4: Write multiplication equations from word problems indicating multiplicative comparisons and describe multiplication equations as comparisons.
● **4.OA.A.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): No new concept(s) introduced Students are able to: ● multiply to solve word problems involving multiplicative comparison. ● divide to solve word problems involving multiplicative comparison. ● represent problems with drawings and equations, using a symbol for the unknown number. ● distinguish word problems involving multiplicative comparison from those involving additive comparison. Learning Goal 5: Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations.

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● 4.NBT.A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.
[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]
	MP.7 Look for and make use of structure.	Concept(s):
		   ● A quantitative relationship exists between the digits in place value positions of a multi-digit number.
		Students are able to:
		   ● Explain that a digit in one place represents ten times what it would represent in the place to its right.
		
		Learning Goal 6: For a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right.

● 4.NBT.A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]
	MP.7 Look for and make use of structure.	Concept(s):
		   ● Multiple representations of whole numbers exist.
		Students are able to:
		   ● read and write multi-digit whole numbers using base-ten numerals.
		   ● read and write multi-digit whole numbers using number names.
		   ● read and write multi-digit whole numbers using expanded form.
		   ● compare two multi-digit numbers using >, =, and < symbols.
		
		Learning Goal 7: Compare two multi-digit whole numbers (up to one million) using >, =, and < for numbers presented as base ten numerals, number names, and/or in expanded form.

● 4.NBT.A.3. Use place value understanding to round multi-digit whole numbers to any place.
[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]
	MP.7 Look for and make use of structure.	Concept(s):
		   ● Estimation
		Students are able to:
		   ● round whole numbers to any place.
		
		Learning Goal 8: Round multi-digit whole numbers up to one million to any place.

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School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
Pre-Assessment, Quizzes Exit Tickets Daily Monitoring Math Journals Interactive Notebooks Portfolios	Chapter Benchmark Link-It
Focus Mathematical Concepts	

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

Standards:
4.OA.B.4:   3.OA.5, 3.OA.7
4.OA.C.5:   1.G.2, 2.G.1, 3.OA.9
4.MD.A.1:   2.MD.2, 3.MD.2, 3.OA.7
4.OA.A.1:   3.OA.3, 3.OA.5, 3.OA.7
4.OA.A.2:   3.OA.3, 3.OA.7, 4.OA.1
4.NBT.A.1: 2.NBT.1, 3.NBT.3
4.NBT.A.2: 2.NBT.3, 2.NBT.4, 4.NBT.1
4.NBT.A.3: 3.NBT.1, 4.NBT.1, 4.NBT.2

Common Misconceptions:

4.OA.B.4
When listing multiples of numbers, students may not list the number itself. Emphasize that the smallest multiple is the number itself.Some students may think that larger numbers have more factors. Having students share all factor pairs and how they found them will clear up this misconception.

4.MD.A.1
Students believe that larger units will give the larger measure. Students should be given multiple opportunities to measure the same object with different measuring units. For example, have the students measure the length of a room with one-inch tiles, with one-foot rulers, and with yard sticks. Students should notice that it takes fewer yard sticks to measure the room than rulers or tiles and explain their reasoning.

4.NBT.A.1 & 4.NBT.A.2 & 4.NBT.A.3
There are several misconceptions students may have about writing numerals from verbal descriptions. Numbers like one thousand do not cause a problem; however a number like one thousand two causes problems for students. Many students will understand the 1000 and the 2 but then instead of placing the 2 in the ones place, students will write the numbers as they hear them, 10002 (ten thousand two). There are multiple strategies that can be used to assist with this concept, including place-value boxes and vertical-addition method. Students often assume that the first digit of a multi-digit number indicates the "greatness" of a number. The assumption is made that 954 is greater than 1002 because students are focusing on the first digit instead of the number as a whole.

Number Fluency:
4.NBT.4 Students fluently add and subtract multi-digit whole numbers using the standard algorithm.

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
PARCC Released Items http://www.parcc-assessment.org/released-items **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** https://www-k6.thinkcentral.com/ePC/viewResources.do?method=retrieveResources&pageName=resourcepage **Flip Book – Gr 4** 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 GoMath Personal Math Trainer **XtraMath** http://www.xtramath.org **Prodigy** **http://www.prodigygame.com** **MobyMax** **http://www.mobymax.com**

Instructional Best Practices and Exemplars	
1. Identifying similarities and differences	6. Cooperative learning
2. Summarizing and note taking	7. Setting objectives and providing feedback
3. Reinforcing effort and providing recognition	8. Generating and testing hypotheses
4. Homework and practice	9. Cues, questions, and advance organizers
5. Nonlinguistic representations	10. Manage response rates

Vocabulary	
4.OA.B.4 **Gain familiarity with factors and multiples.** multiplication/multiply, division/divide, factor pairs, factor, multiple, prime, composite 4.OA.C.5 **Generate and analyze patterns.** pattern (number or shape), pattern rule 4.MD.A.1 **Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.** measure, metric, customary, convert/conversion, relative size, liquid volume, mass, length, distance, kilometer (km), meter (m), centimeter (cm), kilogram (kg), gram (g), liter (L), milliliter (mL), inch (in), foot (ft), yard (yd), mile (mi), ounce (oz), pound (lb), cup (c), pint (pt), quart (qt), gallon (gal)	4.OA.A.1 & 2 **Use the four operations with whole numbers to solve problems.** multiplication/multiply, division/divide, dividend, divisor, addition/add, subtraction/subtract, equations, unknown, remainders, reasonableness, mental computation, estimation, rounding 4.NBT.A.1, 2 & 3 **Generalize place value understanding for multi-digit whole numbers.** place value, greater than, less than, equal to, ‹, ›, =, comparisons/compare, round

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

9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences.

9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

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.3: Describe how digital tools and technology may be used to solve problems.

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

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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:
- Think Central Online Resources:
  - Reteach
  - Strategic Intervention
  - Intensive Intervention Skill Pack
  - Response to Intervention Activities

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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 4-5 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 ☐ Daily 5 ☐ CAFÉ	☐ Centers ☐ Intervention/Remediation ☐ Projects ☐Academic Games ☐ Other Suggested Activities:

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Interdisciplinary Connections
Science/Social Studies questions embedded in series (math, science, social studies)
Think Central Go Math! Real World Videos (math, reading, science, social studies)
Think Central S.T.E.M. Activities (math and science)
Math Journal Prompts embedded in series (math and writing)

Integration of Computer Science and Design Thinking NJSLS 8
8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.
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.1: Collect, organize, and display data in order to highlight relationships or support a claim.