## Winslow Schools <br> Mathematics Curriculum - Grade 1 <br> Unit 2

| Overview | Standards for Mathematical Content | Unit Focus | Standards for Mathematical Practice |
| :---: | :---: | :---: | :---: |
| Unit 2 <br> Add and Subtract within 20 | - 1.OA.A.1* <br> - 1.OA.D. 7 <br> - 1.OA.D. 8 <br> - 1.OA.B.3* <br> - 1.OA.C.6* <br> - 1.OA.A. 2 <br> - 1.MD.C. 4 <br> - 1.NBT.B.2a-b <br> - 1.NBT.B. 3 <br> - 1.NBT.A.1* | - Represent and solve problems involving addition and subtraction <br> - Work with addition and subtraction equations <br> - Understand and apply properties of operations and the relationship between addition and subtraction <br> - Add and subtract within 20 <br> - Represent and interpret data <br> - Understand place value <br> - Extend the counting sequence | MP. 1 Make sense of problems and persevere in solving them. <br> MP. 2 Reason abstractly and quantitatively. <br> MP. 3 Construct viable arguments and critique the reasoning of others. <br> MP. 4 Model with mathematics. |
| Unit 2: <br> Suggested Open <br> Educational <br> Resources | 1.OA.A. 1 School Supplies 1.OA.D. 7 Valid Equalities? <br> 1.OA.D. 8 Find the Missing Number 1.OA.B. 3 Doubles? <br> 1.OA.C. 6 \$20 Dot Map <br> 1.OA.A. 2 Daisies in vases <br> 1.NBT.B. 2 Roll \& Build <br> 1.NBT.B. 3 Ordering Numbers <br> 1.NBT.A. 1 Start/Stop Counting 2 |  | MP. 5 Use appropriate tools strategically. <br> MP. 6 Attend to precision. <br> MP. 7 Look for and make use of structure. <br> MP. 8 Look for and express regularity in repeated reasoning. |

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

## Winslow Schools

## Mathematics Curriculum - Grade 1

## Unit 2



## Winslow Schools

## Mathematics Curriculum - Grade 1

## Unit 2

| Unit 2 Grade 1 |  |  |
| :---: | :---: | :---: |
| Content Standards | Suggested Standards for Mathematical Practice | Critical Knowledge \& Skills |
| - 1.OA.A.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, 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. <br> MP. 2 Reason abstractly and quantitatively. <br> MP. 3 Construct viable arguments and critique the reasoning of others. <br> MP. 4 Model with mathematics. <br> MP. 5 Use appropriate tools strategically. <br> MP. 8 Look for and express regularity in repeated reasoning. | Concept(s): <br> - Symbols can be used to represent unknown numbers. <br> - The symbol (unknowns) can be in any position. <br> Students are able to: <br> - add, using drawings and equations, to solve word problems involving situations of adding to and putting together. <br> - subtract, using drawings and equations, to solve world problems involving situations of taking from and taking apart. <br> Learning Goal 1: Use addition and subtraction within 20 to solve problems, including word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions. |
| - 1.OA.D.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. example, which of the following equations are true and which are false? $6=6,7$ $=8-1,5+2=2+5,4+1=5+2$. *(benchmarked) | MP. 2 Reason abstractly and quantitatively. <br> MP. 3 Construct viable arguments and critique the reasoning of others. <br> MP. 6 Attend to precision. <br> MP. 7 Look for and make use of structure. | Concept(s): No new concept(s) introduced <br> Students are able to: <br> - determine if addition equations are true or false <br> - determine if subtraction equations are true or false <br> Learning Goal 2: Determine if addition and subtraction equations, within 20, are true or false. |
| - 1.OA.D.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <br> example, determine the unknown number that makes the equation true in each of the equations $8+?=11,5=\_-3$, $6+6=\ldots *($ benchmarked $)$ | MP. 2 Reason abstractly and quantitatively. <br> MP. 6 Attend to precision. <br> MP. 7 Look for and make use of structure. | Concept(s): No new concept(s) introduced <br> Students are able to: <br> - determine the unknown number that makes an equation true. <br> - solve addition or subtraction equations by finding the missing whole number. <br> Learning Goal 3: Solve addition and subtraction equations, within 20, by finding the missing whole number in any position. |

## Winslow Schools <br> Mathematics Curriculum - Grade 1 <br> Unit 2

- 1.OA.B.3. Apply properties of operations as strategies to add and subtract. Examples: If $8+3=11$ is known, then $3+8=11$ is also known. (Commutative property of addition.) To add $2+6+4$, the second two numbers can be added to make a ten, so $2+6+4=2+10=12$. (Associative property of addition.) (Students need not use formal terms for these properties) *(benchmarked)

20, demonstrating fluency for addition and subtraction within 10 . Use strategies such as counting on; making ten (e.g., $8+6=8+2+4=$ $10+4=14)$; decomposing a number leading to a ten (e.g., 13-4=13-3-$1=10-1=9$ ); using the relationship between addition and subtraction (e.g., knowing that $8+4=12$, one knows 12-8=4); and creating equivalent but easier or known sums (e.g., adding $6+7$ by creating the known equivalent $6+6+1=12+1$ $=13$ ).

- 1.OA.A.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem


## MP. 2 Reason abstractly and quantitatively. <br> Concept(s):

MP. 7 Look for and make use of structure.
MP. 8 Look for and express regularity in repeated reasoning.

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.

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. 8 Look for and express regularity in repeated reasoning.

Students are able to

Concept(s):

Concept(s):

- When adding, the numbers need not be added in order.
- To add $2+6+4$, the second two numbers can be added first to make a ten. [e.g., $2+6+4=2+10=12$ (Associative Property)]
- add and subtract, within 20, using properties of operations as strategies. (Associative Property)

Learning Goal 4: Apply properties of operations as strategies (Associative Property) to add or subtract within 20.

- Different strategies can be used to add and subtract.

Students will be able to

- add and subtract within 20, using the following strategies:
- counting on;
- making ten;
- composing numbers;
- decomposing numbers leading to a ten;
- relationship between addition and subtraction, and
- creating equivalent but easier or known sums.
- fluently add or subtract whole numbers within 20.

Learning Goal 5: Add and subtract whole numbers within 20 using various strategies: counting on, making ten, composing, decomposing, relationship between addition and subtraction, creating equivalent but easier or known sums, etc.

- Symbols can be used to represent unknown numbers.
- The symbol (unknowns) can be in any position.

Students are able to:

- use objects and drawings to represent word problems that call for less than or equal to 20 .

Learning Goal 6: Solve addition word problems with three whole numbers with sums less than or equal to 20 .

## Winslow Schools <br> Mathematics Curriculum - Grade 1 <br> Unit 2

- 1.MD.C.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

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.

Concept(s):

- Numbers can be organized to represent data.

Students are able to:

- organize objects, representing data, in up to three
categories.
- represent data with objects, drawings, or numerals, in up to
- represent data with objects, drawings, or numerals, in up to three categories.
- ask and answer questions about:
- the total number of data points;
- the number of data points in each category, and
- how many more or less are in one category than in
another.
Learning Goal 7: Organize, represent, and interpret data with up to three
categories, compare the number of data points among the categories, and find the total number of data points.


## Concept(s):

- Two digits represent amounts of tens and ones.
- 10 can be thought of as a bundle of ten ones - called a ten.

Students are able to:

- compose numbers to 20.
- decompose numbers to 20 .
- identify the value of the number in the tens or ones place.

Learning Goal 8: Compose and decompose numbers to 20 to identify the value of the number in the tens and ones place.

MP. 2 Reason abstractly and quantitatively.
MP. 6 Attend to precision.
MP. 7 Look for and make use of structure.
MP. 8 Look for and express regularity in repeated reasoning.

## 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.
1.NBT.B.2. a. 10 can be thought of as a bundle of ten ones - called a "ten."
1.NBT.B.2. b. The numbers from

11 to 19 are composed of a ten and one, two, three, four, five, six,
seven, eight, or nine ones.

- 1.NBT.B.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, $=$, and <.
1.NBT.B.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:


## Concept(s):

- Use place value understanding to compare two digit numbers.
- Comparing numbers using symbols.

Students are able to:

- use the meaning of tens and ones digits to compare 2 two-digit numbers using >, =, and < symbols.
Learning Goal 9: Use the meaning of tens and ones digits to record comparisons of 2 two-digit numbers using >, $=$, and $<$ symbols.


## Winslow Schools <br> Mathematics Curriculum - Grade 1

## Unit 2

- 1.NBT.A.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral

Concept(s):

- Number names and the count sequence up to 120 .

Students are able to:

- count orally by ones up to 120 .
- count up to 120 beginning at any number less than 120 .
- read numerals up to 120 .
- write numerals up to 120 .
- represent a number of objects up to 120 with a written number.

Learning Goal 10: Count to 120 orally, read and write numerals, and write numerals to represent the number of objects (up to 120).

Winslow Schools
Mathematics Curriculum - Grade 1
Unit 2


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

Standards:
1.0A. A. 1
1.OA. D. 7
1.OA. D. 8
1.OA. B. 3
1.OA. C. 6
1.OA. A. 2
1.MD. C. 4
1.NBT.B.2a-b
1.NBT.B. 3
1.NBT.A. 1
K.OA. 2
K.OA.3, 1.OA. 1
K.OA. 4
K.OA. 3
K.OA. 5
K.OA. 2
K.MD. 3
K.NBT. 1
K.CC. 1

# Winslow Schools <br> Mathematics Curriculum - Grade 1 <br> Unit 2 

## Common Misconceptions

## 1.OA.A. 1 \& 1.OA.A. 2

Many children misunderstand the meaning of the equal sign. The equal sign means "is the same as" but most primary students believe the equal sign tells you that the "answer is coming up" to the right of the equal sign. This misconception is over-generalized by only seeing examples of number sentences with an operation to the left of the equal sign and the answer on the right. A second misconception that many students have is that it is valid to assume that a key word or phrase in a problem suggests the same operation will be used every time. For example, they might assume that the word left always means that subtraction must be used to find a solution. Providing problems in which key words like this are used to represent different operations is essential. For example, the use of the word left in this problem does not indicate subtraction as a solution method: Jose took the 8 stickers he no longer wanted and gave them to Anna. Now Jose has 11 stickers left. How many stickers did Jose have to begin with? Students need to analyze word problems and avoid using key words to solve them.

## 1.OA.B. 3

A common misconception is that the commutative property applies to subtraction. After students have discovered and applied the commutative property for addition, ask them to investigate whether this property works for subtraction. Have students share and discuss their reasoning and guide them to conclude that the commutative property does not apply to subtraction. First graders might have informally encountered negative numbers in their lives, so they think they can take away more than the number of items in a given set, resulting in a negative number below zero. Provide many problems situations where students take away all objects from a set, e.g. $19-19=0$ and focus on the meaning of 0 objects and 0 as a number. Ask students to discuss whether they can take away more objects than what they have.

## 1.OA.C. 6

Students ignore the need for regrouping when subtracting with numbers 0 to 20 and think that they should always subtract a smaller number from a larger number. For example, students solve $15-7$ by subtracting 5 from 7 and $0(0$ tens) from 1 to get 12 as the incorrect answer. Students need to relate their understanding of place-value concepts and grouping in tens and ones to their steps for subtraction. They need to show these relationships for each step using mathematical drawings, ten-frames or base-ten blocks so they can understand an efficient strategy for multi-digit subtraction.

## 1.OA.D. 7 \& 1.OA.D. 8

Many students think that the equals sign means that an operation must be performed on the numbers on the left and the result of this operation is written on the right. They think that the equal sign is like an arrow that means becomes and one number cannotbe alone on the left. Students often ignore the equal sign in equations that are written in a nontraditional way. For instance, students find the incorrect value for the unknown in the equation $9=\Delta-5$ by thinking $9-5=4$. It is important to provide equations with a single number on the left as in $18=10+8$. Showing pairs of equations such as $11=7+4$ and $7+4=11$ gives students experiences with the meaning of the equal sign as is the same as and equations with one number to the left.

## 1.NBT.B.2a-b \& 1.NBT.B. 3

Often when students learn to use an aid (Pac Man, bird, alligator, etc.) for knowing which comparison sign ( $<,>,=$ ) to use, the students don't associate the real meaning and name with the sign. The use of the learning aids must be accompanied by the connection to the names: < Less Than, > Greater Than, and = Equal To. More importantly, students need to begin to develop the understanding of what it means for one number to be greater than another. In Grade 1, it means that this number has more tens, or the same number of tens, but with more ones, making it greater. Additionally, the symbols are shortcuts for writing down this relationship. Finally, students need to begin to understand that both inequality symbols $(<,>)$ can create true statements about any two numbers where one is greater/smaller than the other, $(15<28$ and $28>15)$.

## Winslow Schools <br> Mathematics Curriculum - Grade 1 <br> Unit 2

## Number Fluency:

1.OA. 1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem
1.OA. 6 Add and subtract within 20 , demonstrating fluency for addition and subtraction within 10 . Use strategies such as counting on; making ten (e.g., $8+6=8+2+4=10+4$ $=14$ ); decomposing a number leading to a ten (e.g., $13-4=13-3-1=10-1=9$ ); using the relationship between addition and subtraction (e.g., knowing that $8+4=12$, one knows $12-8=4$ ); and creating equivalent but easier or known sums (e.g., adding $6+7$ by creating the known equivalent $6+6+1=12+1=13$ ).
1.NBT. 1 Count to 120 , starting at any number less than 120 . In this range, read and write numerals and represent a number of objects with a written numeral.
1.NBT. 4 Add within 100 , including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10 , using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten

## Achieve the Core - GoMath Fluency Activities

http:://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

## Winslow Schools

Mathematics Curriculum - Grade 1
Unit 2

| District/School Tasks | District/School Primary and Supplementary Resources |
| :---: | :---: |
| Examples of CCSS Items - Delaware Comparison Document Delaware Common Core Item Bank for Mathematics - Grade 1 http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_G rade_1.pdf | Text - Go Math <br> Think Central <br> https://www- <br> k6.thinkcentral.com/ePC/viewResources.do?method=retrieveResources\&pageName=res <br> ourcepage <br> XtraMath <br> https://xtramath.org/ <br> $\mathbf{1}^{\text {st }}$ Grade Flipbook <br> http://community.ksde.org/Default.aspx?tabid=5646 <br> North Carolina Dept of Ed. Wikispaces: <br> http://maccss.ncdpi.wikispaces.net/Elementary <br> 101 Math Discourse Questions: <br> http://www.casamples.com/downloads/100MathDiscourseQuestions_Printable.pdf <br> Asking Effective Questions <br> http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_AskingEffective Questions.pdf <br> ThinkCentral Personal Math Trainer |
| Instructional Best Practices and Exemplars |  |
| 1. Identifying similarities and differences <br> 2. Summarizing <br> 3. Reinforcing effort and providing recognition <br> 4. Homework and practice <br> 5. Nonlinguistic representations | 6. Cooperative learning <br> 7. Setting objectives and providing feedback <br> 8. Generating and testing hypotheses <br> 9. Cues, questions, and advance organizers 10. Manage response rates |

Winslow Schools
Mathematics Curriculum - Grade 1
Unit 2

| Vocabulary |  |
| :---: | :---: |
| 1.0A. 1 <br> Represent and solve problems involving addition and subtraction. add, adding to, taking from, putting together, comparing, unknown, sum, less than, equal to, minus, subtract, the same amount as, counting on, making ten, doubles, equation <br> 1.OA. 3 \& 4 <br> Understand and apply properties of operations and the relationship between addition and subtraction. <br> add, subtract, unknown addend, order, first, second <br> 1.OA. 6 <br> Add and subtract within 20. <br> addition, putting together, adding to, counting on, making ten, subtraction, taking apart, taking from, equivalent, sum, unknown, equal, equation, counting all, counting on, counting back | 1.OA. 7 \& 8 <br> Work with addition and subtraction equations. equation, equal, the same amount/quantity as, true, false, addition, putting together, adding to, counting on, making ten, subtract, taking apart, taking from, sum, unknown <br> 1.NBT. 1 <br> Extend the counting sequence. <br> number, zero, one, two...thirteen, fourteen...nineteen...one hundred twenty <br> 1.NBT. 2 \& 3 <br> Understand place value. <br> ones, tens, bundle, left-overs, singles, groups, compare, greater than, less than, equal to, $\langle,\rangle,=$ <br> 1.MD. 4 <br> Represent and interpret data. <br> Data, how many more, how many less, least, same, different, category, question, collect <br> Go Math Vocabulary <br> digit, hundred, ones, ten, >, <, is greater than, is less than, |

## Winslow Schools

## Mathematics Curriculum - Grade 1

Unit 2

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

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.FP. 2 Differentiate between financial needs and wants
9.2.2.CAP. 1 Make a list of different types of jobs and describe the skills associated with each job

The implementation of the 21 st 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.
$\square$ Provide the opportunity to re-take tests
$\square$ Modify activities/assignments/projects/assessments
$\square$ Breakdown activities/assignments/projects/assessments into manageable units
$\square$ Additional time to complete activities/assignments/projects/assessments
$\square$ Provide an option for alternative activities/assignments/projects/assessmentsModify Content
$\square$ Modify Amount
$\square$ Small Group Intervention/RemediationIndividual Intervention/RemediationAdditional Support MaterialsGuided NotesGraphic OrganizersAdjust Pacing of ContentIncrease one on one timePeer Support
$\square$ Other Modifications for Special Education:

## Winslow Schools

Mathematics Curriculum - Grade 1
Unit 2

## 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
$\square$ Provide the opportunity to re-take tests
$\square$ Increase one on one time
$\square$ Oral prompts can be givenUsing visual demonstrations, illustrations, and modelsGive directions/instructions verbally and in simple written formatPeer SupportModify activities/assignments/projects/assessmentsAdditional time to complete activities/assignments/projects/assessments
$\square$ Provide an option for alternative activities/assignments/projects/assessments$\square$ Modify ContentModify AmountAdjust Pacing of ContentSmall Group Intervention/RemediationIndividual Intervention/RemediationAdditional Support MaterialsGuided NotesGraphic Organizers$\square$ Other Modifications for Students At-Risk:

## 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
$\square$ Grades 1 WIDA Can Do Descriptors:
$\square$ Listening $\square$ SpeakingReading $\square$ WritingOral 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


## Winslow Schools

Mathematics Curriculum - Grade 1
Unit 2


