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| **Prerequisite Skills**  **(Grade 2)** | **Unit One Standards**  **Grade 3** | **Looking Ahead**  **(Grade 4)** |
| Count within 1000; skip-count by 5s, 10s, and 100s. | Number and Operations in Base Ten 1: Use place value understanding to round whole numbers to the nearest 10 or 100.   * I can use place value to round whole numbers to the nearest 10. * I can use place value to round whole numbers to the nearest 100. | Rounding strategies with larger quantities.  Use place value understanding to round multi-digit whole numbers to any place. |
| Fluently add and subtract within 20 using mental strategies. | Number and Operations in Base Ten 2: **Fluently** add and subtract within 1000 **using strategies and algorithms** based on place value, properties of operations, and/or the relationship between addition and subtraction.   * I can fluently add numbers up to 1,000 using various strategies. * I can fluently subtract numbers up to 1,000 using various strategies. | Fluently add and subtract multi-digit whole numbers using the standard algorithm. |
| Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. | Measurement and Data 1: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.   * I can measure elapsed time to the nearest minute. * I can solve word problems involving addition of time. * I can solve word problems involving subtraction of time. * I can tell and write time to the nearest minute. | Know relative sizes of measurement units within one system of units including hr, min, sec.  Use the four operations to solve word problems involving  intervals of time, including problems involving simple fractions or decimals. |
| 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. | Operations and Algebraic Thinking 8: Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.   * I can construct an equation with a letter standing for the unknown quantity. * I can solve two-step word problems using addition and subtraction. * I can justify my answer using estimation strategies and mental computation. | Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.  Assess the reasonableness of answers using mental computation and estimation strategies. |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Number and Operations in Base Ten 1:  Use place value understanding to round whole numbers to the nearest 10 or 100. | * I can use place value to round whole numbers to the nearest 10. * I can use place value to round whole numbers to the nearest 100. |  |  |  |  |  | | --- | --- | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | | | This standard refers to place value understanding, which extends beyond an algorithm or procedure for rounding.  The expectation is that students have a deep understanding of place value and number sense and can explain and reason about the answers they get when they round.  Students should have numerous experiences using a number line and a hundreds chart as tools to support their work with rounding.  Students learn when and why to round numbers. They identify possible answers and halfway points. Then they narrow where the given number falls between the possible answers and halfway points. They also understand that by convention if a number is exactly at the halfway point of the two possible answers, at this level the number is rounded up. | | | | | **Example:**  **Round 178 to the nearest 10. Use a number line to show your thinking.** | | | | | **Step One**  The answer is either 170 or 180. | **Step Two**  The halfway point is 175. | **Step Three**  178 is between 175 and 180. | **Step Four**  Therefore, the rounded number is 180. |  |  |  | | --- | --- | | **Lessons and Resources for Number and Operations in Base Ten 1** | | | Unit 3 Inv 1.7A (activities 2 and 3) | **Grade 4** Unit5Inv 1.5A |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning5.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Number and Operations in Base Ten 2:  **Fluently** add and subtract within 1000 **using strategies and algorithms** based on place value, properties of operations, and/or the relationship between addition and subtraction. | * I can fluently add numbers up to 1,000 using various strategies. * I can fluently subtract numbers up to 1,000 using various strategies. |  |  |  |  |  | | --- | --- | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | | | This standard refers to fluently, which means accuracy, efficiency (using a reasonable number of steps and time), and flexibility (using strategies such as the distributive property). The word algorithm refers to a procedure or a series of steps. There are other algorithms other than the standard/traditional algorithm.  **Third grade students should have experiences beyond the standard/traditional algorithm.**  Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently.  Problems should include both vertical and horizontal forms, including opportunities for students to apply the commutative and associative properties. Students explain their thinking and show their work by using strategies and algorithms, and verify that their answer is reasonable. | | | | | **Example:**  **There are 178 fourth graders and 225 fifth graders on the playground. What is the total number of students on the playground?** | | | | | **Student A**  100 + 200 = 300  70 + 20 = 90  8 + 5 = 13  300 + 90 + 13 =  403 students | **Student B**  I added 2 to 178 to get 180. I added 220 to get 400. I added the 3 left over to get 403. | **Student C**  I know the 75 plus 25 equals 100. I then added1 hundred from 178 and  2 hundreds from 275. I had a total of 4 hundreds and I had 3 more left to add. So I have 4 hundreds plus 3 more which is 403. | **Student D**  178 + 225 = \_\_\_\_  178 +200 = 378  378 + 20 + 398  398 + 5 = 403 |  |  |  | | --- | --- | | **Lessons and Resources for Number and Operations in Base Ten 2** | | | **Grade 4** Unit 5 Inv 1, 2 and 4 |  |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively3.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning5.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Measurement and Data 1:  Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. | * I can measure elapsed time to the nearest minute. * I can solve word problems involving addition of time. * I can solve word problems involving subtraction of time. * I can tell and write time to the nearest minute. |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | This standard calls for students to solve elapsed time, including word problems. Students could use clock models or number lines to solve. On the number line, students should be given the opportunities to determine the intervals and size of jumps on their number line. Students could use pre-determined number lines (intervals every 5 or 15 minutes) or open number lines (intervals determined by students). | | **Example:** | | Tonya wakes up at 6:45 a.m. It takes her 5 minutes to shower, 15 minutes to get dressed, and 15 minutes to eat breakfast. What time will she be ready for school? Use a number line as one way to show your solution. |  |  |  |  | | --- | --- | --- | | **Lessons and Resources for Measurement and Data 1** | | | | [Hours to Minutes](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Hours%20to%20Minutes.pdf) | [Annie’s School Day](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Annie%20School%20Day.pdf) | Units 5 and 7 - Ten Minute Math ‘What Time Is It?’ Routines – build concept throughout the year | | [NSA elapsed time unit](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/NSA%20Elasped%20Time%20Unit.pdf) | Unit 3 Inv 3.1 – activity 3 + Ten Minute Math ‘What Time Is It?’ Routines in Inv 3.2- 4.6 | [NLVM Activity- What time will it be?](http://nlvm.usu.edu/en/nav/topic_t_4.html) |  |  |  |  |  | | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them3.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics3.html) | [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision1.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 8:  Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. | * I can construct an equation with a letter standing for the unknown quantity. * I can solve two-step word problems using addition and subtraction. * I can justify my answer using estimation strategies and mental computation. |  |  |  |  | | --- | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | | This standard refers to two-step word problems using addition and subtraction. Adding and subtracting numbers should include numbers within 1,000.  This standard calls for students to represent problems using equations with a letter to represent unknown quantities.  This standard refers to estimation strategies, including using compatible numbers (numbers that sum to 10, 50, or 100) or rounding. The focus in this standard is to have students use and discuss various strategies. Students should estimate during problem solving, and then revisit their estimate to check for reasonableness.  When students solve word problems, they use various estimation skills which include identifying when estimation is appropriate, determining the level of accuracy needed, selecting the appropriate method of estimation, and verifying solutions or determining the reasonableness of solutions.  Estimation strategies include, but are not limited to:   * using benchmark numbers that are easy to compute * front-end estimation with adjusting (using the highest place value and estimating from the front end * making adjustments to the estimate by taking into account the remaining amounts) * rounding and adjusting (students round down or round up and then adjust their estimate depending on how much the rounding changed the original values) | | | | **Example:**  **On a vacation, your family travels 267 miles on the first day, 194 miles on the second day and 34 miles on the third day. How many total miles did they travel?** | | | | Typical Estimation Strategies | | | | **Student A**  I first thought about 267 and 34. I noticed that their sum is about 300. Then I knew that 194 is close to  200. When I put 300 and 200 together, I get 500. | **Student B**  I first thought about 194. It is really close to 200. I also have 2 hundreds in 267. That gives me a total of 4 hundreds. Then I have 67 in 267 and the 34. When I put 67 and 34 together that is really close to 100. When I add that hundred to the 4 hundreds that already had, I end up with 500. | **Student C**  I rounded 267 to 300. I rounded 194 to 200. I rounded 34 to 30. When I added 300, 200 and 30, I know my answer will be about 530. |  |  |  | | --- | --- | | **Lessons and Resources for Operations and Algebraic Thinking 8** | | | [CGI Addition and Subtraction Problem Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/CGI%20Addition%20and%20Subtraction%20Story%20Bank.docx)  [CGI Multi-Step Problem Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Multi%20Step%20Problem%20Bank.docx) | \*Embedded within Investigations lessons |  |  |  |  |  | | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them3.html) | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively3.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics3.html) | [5. Use appropriate tools strategically.](http://elementarymath.dmschools.org/5-use-appropriate-tools-strategically2.html) | |

**Optional Lesson Progression**

Unit Pacing: 10 weeks

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| **Resource** | **Location** | **Primary Focus** | | **Standard** |
| Basic Fact Review | [7 Day Supplemental Unit](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/CGI%20Addition%20and%20Subtraction%20Story%20Bank.docx) | * I can fluently add numbers up to 1,000 using various strategies. * I can fluently subtract numbers up to 1,000 using various strategies. | 3.NBT.2 | |
| Investigations | Grade 3Unit 3   * Inv 1.7A (first develop rounding to 10, then expand to 100) – allow more than 1 day   Grade 4 Unit *5*   * Inv 1.5A | * I can use place value to round whole numbers to the nearest 10. * I can use place value to round whole numbers to the nearest 100. | 3.NBT.1 | |
| Investigations | Grade 4 Unit 5   * Inv 1 * Inv 2 * Inv 4 | * I can fluently add numbers up to 1,000 using various strategies. * I can fluently subtract numbers up to 1,000 using various strategies. | 3.NBT.2 | |
| \*Rounding is a prerequisite skill to estimation. Estimation should be included throughout the unit when solving addition and subtraction problems. | | | | |
| \*Estimate prior to solving any number work or word problem (have students explain their reasoning). Use hundreds chart, number line, and rounding hills to model. | | | | |
| CGI Problem Bank  (also embedded in Investigations lessons) | [CGI Addition and Subtraction Problem Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/CGI%20Addition%20and%20Subtraction%20Story%20Bank.docx)  [CGI Multi-Step Problem Bank](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Multi%20Step%20Problem%20Bank.docx) | * I can construct an equation with a letter standing for the unknown quantity. * I can solve two-step word problems using addition and subtraction. * I can justify my answer using estimation strategies and mental computation. | | 3.OA.8 |
| Investigations | Unit 3   * Inv 3.1 – activity 3 + What Time Is It? Ten Minute Math Routines in Inv 3.2- 4.6   Units 5 and 7   * Ten Minute Math What Time Is It? Routines – build concept throughout the year | * I can tell and write time to the nearest minute. * I can measure elapsed time to the nearest minute using a number line. * I can solve word problems involving addition of time. * I can solve word problems involving subtraction of time. | | 3.MD.1 |
| Quantiles.com | [Hours to Minutes](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Hours%20to%20Minutes.pdf) | * I can tell and write time to the nearest minute. * I can measure elapsed time to the nearest minute using a number line. * I can solve word problems involving addition of time. * I can solve word problems involving subtraction of time. | | 3.MD.1 |
| Quantiles.com | [Annie’s School Day](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/Annie%20School%20Day.pdf) |
| NSA | [NSA elapsed time unit](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/3rd%20Grade/NSA%20Elasped%20Time%20Unit.pdf) |
| NLVM | [NLVM Activity- What time will it be?](http://nlvm.usu.edu/en/nav/topic_t_4.html) |
| \*Instruction should be problem-based. Include estimation as an on-going component of addition and subtraction instruction. Practicing skills should not be done in isolation, but place value strategies should be viewed as a means to solve real problems. | | | | |

**\*Units are designed for one lesson per day. This is an approximate. Some lessons may take more than one day. Use teacher discretion based on student need when planning unit length.**