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| Name of Unit/Course: | | |
| **Overall Unit Information (Required for MOOC participants)** | | **Self-Check** |
| Unit or Course Goal(s) | In this unit students will investigate the relationships between place value and addition, subtraction, and multiplication. | See A1 |
| Standards | Name of standards: Georgia Standards of Excellence  Link to standards: <https://www.georgiastandards.org/Georgia-Standards/Documents/Grade-K-5-Mathematics-Standards.pdf>  Location information: Norton Park Elementary School  Grade/Year: 4th grade (Ages 9-10)  Subject: Math  Standards (as written):  MGSE4.OA.1 Understand that a multiplicative comparison is a situation in which one quantity is multiplied by a specified number to get another quantity. a. Interpret a multiplication equation as a comparison e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. b. Represent verbal statements of multiplicative comparisons as multiplication equations.  MGSE4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison. Use drawings and equations with a symbol or letter for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.  MGSE4.OA.3 Solve multistep word problems 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 symbol or letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.  MGSE4.NBT.1 Recognize that in a multi-digit whole number, a digit in any one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.  MGSE4.NBT.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.  MGSE4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.  MGSE4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm. MGSE4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.  MGSE4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and onedigit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | See A2 |
| Learner Characteristics | Norton Park Elementary School is a Title I school located in Smyrna Georgia. The school is situated in a low socioeconomic setting and 91% of students receive a free or reduced lunch. 40% of the student population is English learners and 20% of students are special education students. 70% of students met or exceeded on the CRCT in math for the 2013-2014 school year. | See B1 |
| Technology requirements | 1. Internet connected computer, tablet, or smart device 2. Schoology account/app 3. Educreations account/app 4. Word processor | See D5 |
| Prerequisite Skills | 1. 3rd grade reading and writing proficiency (differentiation provided) 2. Safe and effective Internet research and navigation 3. Proficient with computer, tablet, and/or smart device | See A4 & D6 |
| Introductory Communication Plans | Students are expected to   1. Complete each modules activities, assignments, quizzes, and tests by the due date as outlined by the course calendar. 2. Participate in weekly discussion posts and reply to at least two peers’ original posts (see examples in the course orientation module). 3. Follow the communication rules outlined in the syllabus. 4. Use appropriate netiquette when completing assignments and communicating with others. | See A4 B9 & B10 |
| Universal Design Principles Considered | Multiple forms of representation: webpages, videos, transcripts,  Multiple forms of expression: tests, quizzes, discussion forums  Multiple forms of engagement: camera, webcam, forums, games | See B4 |
| Number of Modules or Weeks | This will be a six-week unit. Students will be given an overview of the modules learning tasks in the face-to-face environment every Monday. Students will be expected to complete all tasks by the following Sunday. | See A3 |

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| **Module 1 Plan** *(Note: “module” and “lesson” used interchangeably)* **(Required for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: 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.  **Objective**: The student will be able to generalize place value understanding for multi-digit whole numbers with 80% accuracy on the module quiz | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Educreation Screencast (rubric) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem: The population of a city is 745,623 people. Write this number in number name form and expanded form. The same city holds a record for the largest pumpkin, weighing two thousand, four hundred fifty-two pounds. Write this number in base ten numeral form and expanded form.   * Students will complete the module quiz * Students will create a screencast modeling the module objectives. | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Educreation Screencast | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-5th-place-value-rounding-topi/cc-4th-place-value>  Educreations Screencast: <https://www.educreations.com/> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |

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| **Module 2 Plan (Optional for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: 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  **Objective**: The student will be able to generalize place value understanding for multi-digit whole numbers with 80% accuracy on the module quiz | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Problem Solving Activity (Terrific Tim’s Ten Tiny Toes) (rubric) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem: While playing a game, two friends each pick a number from a bag. Samantha’s number is 357,896 and Jaclyn's number is 37,689. Compare the values of the following digits in the two friends’ numbers: 3, 7, and 8.   * Students will complete the module quiz * Students will solve, model and explain the problem solving activity ([Terrific Tim’s Ten Tiny Toes](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/73158)) by using virtual manipulatives. Students will take a screen shot of the models they create and then upload it with an explanation of their solution to a discussion forum. | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Problem Solving Activity | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-5th-place-value-rounding-topi/cc-4th-place-value>  Problem Solving Activity: <http://www.cpalms.org/Public/PreviewResourceLesson/Preview/73158>  Virtual Manipulatives:  <http://nlvm.usu.edu/en/nav/topic_t_1.html> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Students who struggle to respond in writing can verbally share their justifications for the problem solving activity using Educreations. * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |

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| **Module 3 Plan (Optional for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: Use place value understanding to round multi-digit whole numbers to any place.  **Objective**: The student will be able to generalize place value understanding for multi-digit whole numbers with 80% accuracy on the module quiz | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Educreation Screencast (rubric) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem: The average salary of a fast food manager in the state of Georgia is $23,756. Julie’s teacher asked the class to round this amount. Sam rounded it to $24,000, Julie rounded it to $23,800, and Frank rounded it to $23,750. Who is correct?   * Students will complete the module quiz * Students will create a screencast modeling the module objectives | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Educreation Screencast | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-5th-place-value-rounding-topi/cc-4th-rounding> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |

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| **Module 4 Plan (Optional for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: Fluently add multi-digit whole numbers using the standard algorithm.  **Objective**: The student will be able to use addition, subtraction and multiplication with whole numbers to solve problems with 80% accuracy on the module quiz. | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Performance Task [(Modern Family)](https://www.filepicker.io/api/file/GzZKS8RRRLqvoQUTdMYQ) (answer key) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem: What steps would you take to find the sum of 276,549 and 45,622? Show your work and explain the steps using words.   * Students will complete the module quiz * Students will complete the performance task “[Modern Family](https://www.filepicker.io/api/file/GzZKS8RRRLqvoQUTdMYQ)” | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Performance Task | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-add-sub-topic/cc-4th-adding>  Performance Task (Modern Family): <https://www.filepicker.io/api/file/GzZKS8RRRLqvoQUTdMYQ> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |

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| **Module 5 Plan (Optional for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: Fluently subtract multi-digit whole numbers using the standard algorithm.  **Objective**: The student will be able to use addition, subtraction and multiplication with whole numbers to solve problems with 80% accuracy on the module quiz. | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Educreation Screencast (rubric) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem: What steps would you take to find the difference of 276,549 and 49,672? Show your work and explain using words.   * Students will complete the module quiz * Students will create a screencast modeling the module objectives | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Educreation Screencast | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-add-sub-topic/cc-4th-subtracting> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |

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| **Module 6 Plan (Optional for MOOC participants)** | | **Self-Check** |
| Module Objective(s) | **Standard**: Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.  **Objectives**:  The student will be able to use addition, subtraction and multiplication with whole numbers to solve problems with 80% accuracy on the module quiz  The student will be able to use place value understanding and properties of operations to perform multi-digit arithmetic with 80% accuracy on the module quiz | See A1 & A2 |
| Module Assessment(s) | * Khan Academy review exercises * Word Problem Discussion Forum and Peer Response (rubric) * Quiz on module objective (answer key; graded automatically) * Performance Task ([At the Circus](https://www.georgiastandards.org/Georgia-Standards/Frameworks/4th-Math-Unit-2.pdf)) (answer key) | See A2 A3 C1 C2 & C5 |
| Description of Learning Activities | * Students will view all learning videos and then complete the review exercises through Khan Academy. * Students will participate in the differentiated module discussion forum.   Word Problem:  Mr. Yarbrough is buying pencils for his students. He has 24 students. He wants to give each student 3 pencils. The pencils come in packs of 12. How many packs of pencils should Mr. Yarbrough purchase?   * Students will complete the module quiz * Students will complete the performance task “[At the Circus”](https://www.georgiastandards.org/Georgia-Standards/Frameworks/4th-Math-Unit-2.pdf) | See A2 A3 B3 B4 & B10 |
| Formative Evaluation & Feedback | * Whole group lessons in the face-to-face environment to discuss learning activities * Small group conferencing in the face-to-face environment * Khan Academy review exercises * Performance Task | See A3 C1 C3 & C5 |
| Physical Learning Materials | NA | See A3, A9, B1, B4, & B6 |
| Digital Learning Objects | Videos and review exercises: <https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-mult-div-topic/cc-4th-multiplication> | See A3, A9, B1, B4, & B6 |
| Plans for Differentiation | * Differentiated word problems will be assigned to students based on reading level or English proficiency. Each group of students will also be provided a modified rubric. * An outline of notes for the module will be provided according to IEP suggestions. * The face-to-face environment will be used to offer additional assistance and ongoing support to learners. | See B1 B4 & B6 |