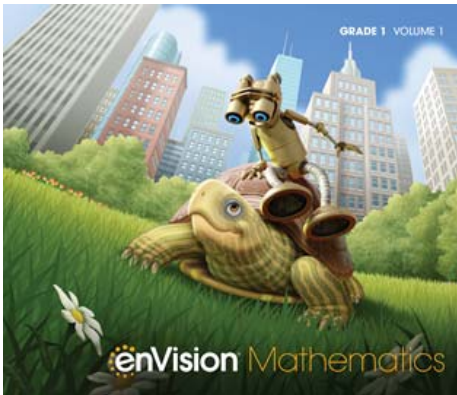


A Correlation of

enVision[®] Mathematics

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To the



Georgia Standards of Excellence 2015-2016 Mathematics Kindergarten – Grade 5

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Standards for Mathematical Practice	
Students are expected to:	
<p>1. Make sense of problems and persevere in solving them. In Kindergarten, students begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” or they may try another strategy.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 21–24, 29–32, 77–80, 145–148, 157–160, 173–176, 181–184, 205–208, 217–220, 225–228, 265–268, 273–276, 297–300, 305–308, 317–320</p>
<p>2. Reason abstractly and quantitatively. Younger students begin to recognize that a number represents a specific quantity. Then, they connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 5–8, 9–12, 25–28, 33–36, 41–44, 61–64, 65–68, 93–96, 97–100, 101–104, 113–116, 117–120, 145–148, 149–152, 177–180</p>

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<p>3. Construct viable arguments and critique the reasoning of others. Younger students construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning— argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 5–8, 9–12, 13–16, 17–20, 41–44, 65–68, 69–72, 73–76, 77–80, 93–96, 101–104, 105–108, 109–112, 117–120, 141–144</p>
<p>4. Model with mathematics. In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 9–12, 17–20, 21–24, 25–28, 29–32, 69–72, 77–80, 93–96, 109–112, 141–144, 153–156, 201–204, 209–212, 217–220, 221–224</p>

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<p>5. Use appropriate tools strategically. Younger students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, kindergarteners may decide that it might be advantageous to use linking cubes to represent two quantities and then compare the two representations side-by-side.</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 5–8, 13–16, 17–20, 33–36, 41–44, 97–100, 105–108, 109–112, 113–116, 121–124, 149–152, 157–160, 181–184, 205–208, 273–276</p>
<p>6. Attend to precision. As kindergarteners begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 13–16, 25–28, 29–32, 61–64, 65–68, 73–76, 97–100, 105–108, 149–152, 153–156, 173–176, 177–180, 185–188, 201–204, 213–216</p>
<p>7. Look for and make use of structure. Younger students begin to discern a pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that $3 + 2 = 5$ and $2 + 3 = 5$.</p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 37–40, 61–64, 117–120, 121–124, 181–184, 225–228, 269–272, 293–296, 317–320, 321–324, 329–332, 357–360, 361–364, 365–368, 369–372</p>

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<p>8. Look for and express regularity in repeated reasoning. In the early grades, students notice repetitive actions in counting and computation, etc. For example, they may notice that the next number in a counting sequence is one more. When counting by tens, the next number in the sequence is “ten more” (or one more group of ten). In addition, students continually check their work by asking themselves, “Does this make sense?”</p>	<p>Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and, as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Learning activities offer students opportunities to look for regularity in the way operations behave.</p> <p>SE/TE: 21–24, 37–40, 73–76, 113–116, 121–124, 141–144, 157–160, 177–180, 209–212, 269–272, 293–296, 317–320, 325–328, 329–332, 353–356</p>
Counting and Cardinality K.CC	
Know number names and the count sequence.	
<p>MGSEK.CC.1 Count to 100 by ones and by tens.</p>	<p>SE: 431, 432, 433–436, 437–440, 441–444, 445–448, 449–452, Reteaching 455–456, Sets A-C, 465–468, 469–472, 473–476, 477–480</p> <p>TE: 431–431A, 432–432C, 433A–436B, 437A–440B, 441A–444B, 445A–448B, 449A–452B, Reteaching 455–456, Sets A-C, 465A–468B, 469A–472B, 473A–476B, 477A–480B</p>
<p>MGSEK.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p>	<p>SE: 92, 117–120, Reteaching 130, Set G, 149–152, 157–160, 248, 347, 348, 365–368, 373–376, Reteaching 380, Set D, 431, 432, 433–436, 437–440, 441–444, 445–448, 449–452, Reteaching 456, Set D</p> <p>TE: 92–92C, 117A–120B, Reteaching 129–130, Set G, 149A–152B, 157A–160B, 248–248C, 347–347A, 348–348C, 365A–368B, 373A–376B, Reteaching 380, Set D, 431–431A, 432–432C, 433A–436B, 437A–440B, 441A–444B, 445A–448B, 449A–452B, Reteaching 456, Set D</p>

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<p>MGSEK.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).</p>	<p>SE: 3, 4, 13–16, 25–28, 33–36, Reteaching 47, 49, Set B, E, 59–60, 73–76, 77–80, 91, 92, 97–100, 105–108, 113–116, 121–124, Reteaching 127-129, Sets A, C, E, 199–200, 201–204, 205–208, 209–212, 213–216, 247, 248, 249–252, 253–256, 257–260, 261–264, 291–292, 317–320, 325–328, 329–332, 347, 348, 349–352, 353–356, 357–360, 361–364, Reteaching 379, Set A</p> <p>TE: 3–3A, 4–4C, 13A–16B, 25A–28B, 33A–36B, Reteaching 47–50, Sets B, E, 59–60A, 73A–76B, 77A–80B, 91–91A, 92–92C, 97A–100B, 105A–108B, 113A–116B, 121A–124B, Reteaching 127–130, Sets A, C, E, 199–200A, 201A–204B, 205A–208B, 209A–212B, 213A–216B, 247–247A, 249A–252B, 248–248C, 253A–256B, 257A–260B, 261A–264B, 291–292A, 317A–320B, 325A–328B, 329A–332B, 347–347A, 348–348C, 349A–352B, 353A–356B, 357A–360B, 361A–364B, Reteaching 379, Set A</p>
Count to tell the number of objects.	
<p>MGSEK.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.</p>	<p>SE: 369–372</p> <p>TE: 369A–372B</p>
<p>a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (one-to-one correspondence)</p>	<p>SE: 3, 4, 5–8, 17–20, 29–32, 37–40, 41–44, Reteaching 47-50, Sets A, C, F, 91, 92, 93–96, 101–104, 109–112, Reteaching 127-128, Sets B, D</p> <p>TE: 3–3A, 4–4C, 5A–8B, 17A–20B, 29A–32B, 37A–40B, 41A–44B, Reteaching 47–50, Sets A, C, F, 91–91A, 92–92C, 93A–96B, 101A–104B, 109A–112B, Reteaching 127–128, Sets B, D</p>
<p>b. Understand that the last number name said tells the number of objects counted (cardinality). The number of objects is the same regardless of their arrangement or the order in which they were counted.</p>	<p>SE: 3, 4, 5–8, 9–12, 21–24, 41–44, Reteaching 50, Set F, 91, 109–112, 121–124, Reteaching 127–128, Sets B, D</p> <p>TE: 3–3A, 4–4C, 9A–12B, 21A–24B, 41A–44B, Reteaching 49–50, Set F, 91–91A, 109A–112B, 121A–124B, Reteaching 127–128, Sets B, D</p>

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<p>c. Understand that each successive number name refers to a quantity that is one larger.</p>	<p>SE: 3, 4, 37–40, 91, 117–120, 139–140, 157–160, 347, 365–368</p> <p>TE: 3–3A, 4–4C, 37A–40B, 91–91A, 117A–120B, 139–140A, 157A–160B, 347–347A, 365A–368B</p>
<p>MGSEK.CC.5 Count to answer ‘how many?’ questions.</p>	<p>SE: 3, 4, 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, 29–32, 33–36, 41–44, Reteaching 47–50, Sets A, C, F, 59–60, 61–64, 65–68, 69–72, 73–76, 91, 92, 93–96, 97–100, 101–104, 105–108, 113–116, 139–140, 141–144, 171, 173–176, 177–180, 199–200, 201–204, 247, 249–252, 347, 348, 349–352, 353–356, 357–360, 361–364, 369–372, 373–376, Reteaching 379–380, Sets A, C, D, 387–388, 389–392, 393–396, 397–400, 401–404, 405–408, 409–412, 413–416, 513–516, 525–528, 529–532, 533–536</p> <p>TE: 3–3A, 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 21A–24B, 25A–28B, 29A–32B, 33A–36B, 41A–44B, Reteaching 47–50, Sets A, C, F, 59–60A, 61A–64B, 65A–68B, 69A–72B, 73A–76B, 91–91A, 92–92C, 93A–96B, 97A–100B, 101A–104B, 105A–108B, 113A–116B, 139–140A, 141A–144B, 171–171A, 173A–176B, 177A–180B, 199–200A, 201A–204B, 247–247A, 249A–252B, 347–347A, 348–348C, 349A–352B, 353A–356B, 357A–360B, 361A–364B, 369A–372B, 373A–376B, Reteaching 379–380, Sets A, C, D, 387–388A, 389A–392B, 393A–396B, 397A–400B, 401A–404B, 405A–408B, 409A–412B, 413A–416B, 513A–516B, 525A–528B, 529A–532B, 533A–536B</p>

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<p>a. Count to answer “how many?” questions about as many as 20 things arranged in a variety of ways (a line, a rectangular array, or a circle), or as many as 10 things in a scattered configuration.</p>	<p>SE: 3, 4, 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, 29–32, 33–36, 41–44, Reteaching 47–50, Sets A, C, F, 59–60, 61–64, 65–68, 69–72, 73–76, 91, 92, 93–96, 97–100, 101–104, 105–108, 113–116, 139–140, 141–144, 171, 173–176, 177–180, 199–200, 201–204, 247, 249–252, 347, 348, 349–352, 353–356, 357–360, 361–364, 369–372, 373–376, Reteaching 379–380, Sets A, C, D, 387–388, 389–392, 393–396, 397–400, 401–404, 405–408, 409–412, 413–416, 513–516, 525–528, 529–532, 533–536</p> <p>TE: 3–3A, 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 21A–24B, 25A–28B, 29A–32B, 33A–36B, 41A–44B, Reteaching 47–50, Sets A, C, F, 59–60A, 61A–64B, 65A–68B, 69A–72B, 73A–76B, 91–91A, 92–92C, 93A–96B, 97A–100B, 101A–104B, 105A–108B, 113A–116B, 139–140A, 141A–144B, 171–171A, 173A–176B, 177A–180B, 199–200A, 201A–204B, 247–247A, 249A–252B, 347–347A, 348–348C, 349A–352B, 353A–356B, 357A–360B, 361A–364B, 369A–372B, 373A–376B, Reteaching 379–380, Sets A, C, D, 387–388A, 389A–392B, 393A–396B, 397A–400B, 401A–404B, 405A–408B, 409A–412B, 413A–416B, 513A–516B, 525A–528B, 529A–532B, 533A–536B</p>
<p>b. Given a number from 1-20, count out that many objects.</p>	<p>SE: 13-16, 17- 20, 25-28, 97-100, 101-104, 105-108, 349-352, 353-356, 357-360, 361-364, 369-372</p> <p>TE: 13A-16B, 17A-20B, 25A-28B, 97A-100B, 101A-104B, 105A-108B, 349A-352B, 353A-356,B 357A-360B, 361A-364B, 369A-372B</p>
<p>c. Identify and be able to count pennies within 20. (Use pennies as manipulatives in multiple mathematical contexts.)</p>	<p>The opportunities to use pennies as manipulatives to count within 20 are available. Please see:</p> <p>SE: 13-16, 17- 20, 25-28, 97-100, 101-104, 105-108, 349-352, 353-356, 357-360, 361-364, 369-372</p> <p>TE: 13A-16B, 17A-20B, 25A-28B, 97A-100B, 101A-104B, 105A-108B, 349A-352B, 353A-356,B 357A-360B, 361A-364B, 369A-372B</p>

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Compare numbers.	
MGSEK.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	<p>SE: 61–64, 65–68, 69–72, 73–76, 77–80, Reteaching 83–84, Sets A–D, 92, 117–120, 139–140, 141–144, 145–148, 149–152, 153–156, Reteaching 163–164, Sets A–D, 171, 181–184, 185–188, 509–512</p> <p>TE: 61A–64B, 65A–68B, 69A–72B, 73A–76B, 77A–80B, Reteaching 83–84, Sets A–D, 92–92C, 117A–120B, 139–140A, 141A–144B, 145A–148B, 149A–152B, 153A–156B, Reteaching 163–164, Sets A–D, 171–171A, 181A–184B, 185A–188B, 509A–512B</p>
MGSEK.CC.7 Compare two numbers between 1 and 10 presented as written numerals.	<p>SE: 139–140, 145–148, 149–152, 153–156, Reteaching 163–164, Sets B, C, 171, 181–184, 185–188</p> <p>TE: 139–140A, 145A–148B, 149A–152B, 153A–156B, Reteaching 163–164, Sets B, C, 171–171A, 181A–184B, 185A–188B</p>
Operations and Algebraic Thinking K.OA	
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
MGSEK.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	<p>SE: 199–200, 201–204, 205–208, 209–212, 213–216, 217–220, 221–224, 225–228, 229–232, Reteaching 235–236, Sets A–D, 247, 248, 249–252, 253–256, 257–260, 261–264, 265–268, 269–272, 273–276, Reteaching 279–280, Sets A–D, 291–292, 293–296, 297–300, 301–304, 305–308, 309–312, 313–316, 317–320, 321–324, Reteaching 335–338, Sets A, C, E–G</p> <p>TE: 199–200A, 201A–204B, 205A–208B, 209A–212B, 213A–216B, 217A–220B, 221A–224B, 225A–228B, 229A–232B, Reteaching 235–236, Sets A–D, 247–247A, 248–248C, 249A–252B, 253A–256B, 257A–260B, 261A–264B, 265A–268B, 269A–272B, 273A–276B, Reteaching 279–280, Sets A–D, 291–292A, 293A–296B, 297A–300B, 301A–304B, 305A–308B, 309A–312B, 313A–316B, 317A–320B, 321A–324B, Reteaching 335–338, Sets A, C, E–G</p>

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MGSEK.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	<p>SE: 199–200, 201–204, 205–208, 209–212, 213–216, 217–220, 221–224, 229–232, Reteaching 237-238, Sets E, F, G, 247, 248, 249–252, 253–256, 257–260, 261–264, 265–268, 273–276, Reteaching 280-282, Sets C, E, G, H, 291–292, 293–296, 309–312, 313–316, 321–324, 348</p> <p>TE: 199–200A, 201A–204B, 205A–208B, 209A–212B, 213A–216B, 217A–220B, 221A–224B, 229A–232B, Reteaching 237-238, Sets E, F, G, 247–247A, 248–248C, 249A–252B, 253A–256B, 257A–260B, 261A–264B, 265A–268B, 273A–276B, Reteaching 279-282, Sets C, E, G, H, 291–292A, 293A–296B, 309A–312B, 313A–316B, 321A–324B, 348–348C</p>
MGSEK.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation. (drawings need not include an equation).	<p>SE: 293–296, 309–312, 313–316, 321–324, 325–328, 329–332</p> <p>TE: 293A–296B, 309A–312B, 313A–316B, 321A–324B, 325A–328B, 329A–332B</p>
MGSEK.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	<p>SE: 291–292, 325–328, 329–332, Reteaching 338, Set H, 517–520, 521–524</p> <p>TE: 291–292A, 325A–328B, 329A–332B, Reteaching 337–338, Set H, 517A–520B, 521A–524B</p>
MGSEK.OA.5 Fluently add and subtract within 5.	<p>SE: 199–200, 225–228, Reteaching 238, Set H, 247, 269–272, Reteaching 282, Set G, 291–292, 297–300, 301–304, 305–308, Reteaching 335–336, Sets B, D</p> <p>TE: 199–200A, 225A–228B, Reteaching 237–238, Set H, 247–247A, 269A–272B, Reteaching 281–282, Set G, 291–292A, 297A–300B, 301A–304B, 305A–308B, Reteaching 335–336, Sets B, D</p>

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Number and Operations in Base Ten K.NBT	
Work with numbers 11–19 to gain foundations for place value.	
MGSEK.NBT.1 <i>Compose and decompose numbers from 11 to 19 into ten ones and some further ones to understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$)</i>	SE: 387–388, 389–392, 393–396, 397–400, 401–404, 405–408, 409–412, 413–416, Reteaching 419–420, Sets A–D, Reteaching 421–422, Sets E–G TE: 387–388A, 389A–392B, 393A–396B, 397A–400B, 401A–404B, 405A–408B, 409A–412B, 413A–416B, Reteaching 419–420, Sets A–D, Reteaching 421–422, Sets E–G
Measurement and Data K.MD	
Describe and compare measurable attributes.	
MGSEK.MD.1 Describe several measurable attributes of an object, such as length or weight. <i>For example, a student may describe a shoe as, “This shoe is heavy! It is also really long!”</i>	SE: 547–548, 549–552, 553–556, 557–560, 561–564, 565–568 TE: 547–548A, 549A–552B, 553A–556B, 557A–560B, 561A–564B, 565A–568B
MGSEK.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i>	SE: 547–548, 549–552, 553–556, 557–560, 565–568, 569–572, Reteaching 575–576, Sets A–D TE: 547–548A, 549A–552B, 553A–556B, 557A–560B, 565A–568B, 569A–572B, Reteaching 575–576, Sets A–D
Classify objects and count the number of objects in each category.	
MGSEK.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	SE: 171, 172, 173–176, 177–180, 181–184, 185–188, Reteaching 191–192, Sets A–D, 465–468 TE: 171–171A, 172–172C, 173A–176B, 177A–180B, 181A–184B, 185A–188B, Reteaching 191–192, Sets A–D, 465A–468B

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Geometry K.G	
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	
MGSEK.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to</i> .	SE: 463–464, 469–472, 473–476, 477–480, 481–484, 485–488, 489–492, Reteaching 497-498, Sets F, G, 507, 508, 525–528 TE: 463–464A, 469A–472B, 473A–476B, 477A–480B, 481A–484B, 485A–488B, 489A–492B, Reteaching 497–498, Sets F, G, 507–507A, 508–508C, 525A–528B
MGSEK.G.2 Correctly name shapes regardless of their orientations or overall size.	SE: 463–464, 469–472, 473–476, 477–480, 481–484, 485–488, 489–492, Reteaching 495-497 , Sets B-E, 508 TE: 463–464, 469A–472B, 473A–476B, 477A–480B, 481A–484B, 485A–488B, 489A–492B, Reteaching 495–496 Sets B–E, 508–508C
MGSEK.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).	SE: 465–468, 485–488, Reteaching 495, Set A, 507, 521–524 TE: 465A–468B, 485A–488B, Reteaching 495–496, Set A, 507–507A, 521A–524B
Analyze, compare, create, and compose shapes.	
MGSEK.G. 4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).	SE: 463–464, 473–476, 477–480, 481–484, 507, 509–512, 513–516, 517–520, 521–524, 529–532, Reteaching 539-540, Sets A-D TE: 463–464A, 473A–476B, 477A–480B, 481A–484B, 507–507A, 509A–512B, 513A–516B, 517A–520B, 521A–524B, 529A–532B, Reteaching 539-540, Sets A-D

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<p>MGSEK.G. 5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p>	<p>SE: 507, 513–516, 525–528, 529–532, 533–536, Reteaching 540, Set D</p> <p>TE: 507–507A, 513A–516B, 525A–528B, 529A–532B, 533A–536B, Reteaching 540, Set D</p>
<p>MGSEK.G. 6 Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i></p>	<p>SE: 463–464, 507, 508, 525–528, 533–536</p> <p>TE: 463–464A, 507–507A, 508–508C, 525A–528B, 533A–536B</p>

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Standards for Mathematical Practice	
<i>Students are expected to:</i>	
<p>1. Make sense of problems and persevere in solving them. In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They are willing to try other approaches.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 9–12, 29–32, 33–36, 37–40, 61–64, 85–88, 117–120, 133–136, 137–140, 169–172, 185–188, 189–192, 193–196, 233–236, 253–256</p>
<p>2. Reason abstractly and quantitatively. Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, 29–32, 65–68, 77–80, 89–92, 109–112, 121–124, 137–140, 141–144, 161–164</p>

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<p>3. Construct viable arguments and critique the reasoning of others. First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” “Explain your thinking,” and “Why is that true?” They not only explain their own thinking, but listen to others’ explanations. They decide if the explanations make sense and ask questions.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning—argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 13–16, 21–24, 37–40, 61–64, 65–68, 69–72, 73–76, 89–92, 113–116, 117–120, 125–128, 129–132, 141–144, 185–188</p>
<p>4. Model with mathematics. In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 5–8, 17–20, 21–24, 25–28, 33–36, 57–60, 69–72, 73–76, 81–84, 85–88, 89–92, 113–116, 117–120, 125–128, 137–140</p>

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<p>5. Use appropriate tools strategically. In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 5-8, 17-20, 29-32, 81-84, 113-116, 129-132, 161-164, 165-168, 177-180, 185-188, 213-216, 293-296, 325-328, 365-368, 369-372</p>
<p>6. Attend to precision. As young children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 37-40, 85-88, 189-192, 217-220, 221-224, 237-240, 253-256, 257-260, 261-264, 269-272, 289-292, 305-308, 329-332, 373-376, 377-380</p>
<p>7. Look for and make use of structure. First graders begin to discern a pattern or structure. For instance, if students recognize $12 + 3 = 15$, then they also know $3 + 12 = 15$. (<i>Commutative property of addition.</i>) To add $4 + 6 + 4$, <i>the first two numbers can be added to make a ten, so $4 + 6 + 4 = 10 + 4 = 14$.</i></p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 9-12, 69-72, 73-76, 77-80, 81-84, 89-92, 129-132, 173-176, 221-224, 225-228, 265-268, 285-288, 293-296, 297-300, 301-304</p>

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<p>8. Look for and express regularity in repeated reasoning. In the early grades, students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract “ten” and multiples of “ten” they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, “Does this make sense?”</p>	<p>Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and, as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Learning activities offer students opportunities to look for regularity in the way operations behave.</p> <p>SE/TE: 13–16, 25–28, 57–60, 61–64, 133–136, 165–168, 169–172, 173–176, 177–180, 181–184, 229–232, 261–264, 285–288, 297–300, 309–312</p>
Operations and Algebraic Thinking 1.OA	
Represent and solve problems involving addition and subtraction.	
<p>MGSE1.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.</p>	<p>SE: 3, 4, 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, 29–32, 33–36, 37–40, Reteaching 43–46, Sets A–H, 55–56, 57–60, 61–64, 81–84, 85–88, Reteaching 98, Set H, 107, 108, 113–116, 117–120, 121–124, 137–140, 141–144, Reteaching 149–150, Sets F, G, 161–164, 189–192, 193–196, Reteaching 202, Sets F, G, 211, 233–236, 261–264, 265–268, 269–272</p> <p>TE: 3–3A, 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 21A–24B, 25A–28B, 29A–32B, 33A–36B, 37A–40B, Reteaching 43–46, Sets A–H, 55–56A, 57A–60B, 61A–64B, 81A–84B, 85A–88B, Reteaching 97–98, Set H, 107–107A, 108–108C, 113A–116B, 117A–120B, 121A–124B, 137A–140B, 141A–144B, Reteaching 149–150, Sets F, G, 161A–164B, 189A–192B, 193A–196B, Reteaching 201–202, Sets F, G, 211–211A, 233A–236B, 261A–264B, 265A–268B, 269A–272B</p>

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MGSE1.OA.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.	SE: 4, 211, 212, 225–228, 229–232, 252, 261–264, 569–572 TE: 4–4C, 211–211A, 212–212C, 225A–228B, 229A–232B, 251–252A, 261A–264B, 569A–572B
Understand and apply properties of operations and the relationship between addition and subtraction.	
MGSE1.OA.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.)	SE: 73–76, 89–92, Reteaching 97, Set E, 108, 109–112, 141–144, 169–172, 211, 212, 225–228, 229–232, Reteaching 244, Set C TE: 73A–76B, 89A–92B, Reteaching 97–98, Set E, 108–108C, 109A–112B, 141A–144B, 169A–172B, 211–211A, 212–212C, 225A–228B, 229A–232B, Reteaching 244, Set C
MGSE1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.	SE: 4, 29–32, 33–36, 81–84, Reteaching 98, Set G, 159–160, 173–176, 177–180, 181–184, 185–188, Reteaching 200–201, Sets C–E TE: 4–4C, 29A–32B, 33A–36B, 81A–84B, Reteaching 97–98, Set G, 108–108C, 159–160A, 173A–176B, 177A–180B, 181A–184B, 185A–188B, Reteaching 199–202, Sets C–E
Add and subtract within 20	
MGSE1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	SE: 57–60, 61–64, 65–68, 77–80, Reteaching 95–97, Sets A, C, F, 107, 108, 109–112, 113–116, 117–120, 121–124, Reteaching 147, Sets A, 159–160, 161–164, 185–188, Reteaching 199, 201, Sets A, E, 211, 213–216, 217–220, 221–224, 251–252, 253–256, 257–260, 533–536, 537–540 TE: 57A–60B, 61A–64B, 65A–68B, 77A–80B, Reteaching 95–98, Sets A, C, F, 107–107A, 108–108C, 109A–112B, 113A–116B, 117A–120B, 121A–124B, Reteaching 147–148, Sets A, B, 159–160A, 161A–164B, 185A–188B, Reteaching 199–202, Set A, E, 211–211A, 213A–216B, 217A–220B, 221A–224B, 251–252A, 253A–256B, 257A–260B, 533A–536B, 537A–540B

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MGSE1.OA.6 Add and subtract within 20.	<p>SE: 55–56, 57–60, 61–64, 65–68, 69–72, 77–80, 81–84, 85–88, 89–92, Reteaching 95–96, Sets B, D, 107, 108, 117–120, 121–124, 125–128, 129–132, 133–136, 137–140, 141–144, Reteaching 148–149, Sets C–E, 159–160, 165–168, 169–172, 173–176, 177–180, 181–184, 185–188, Reteaching 200–201, Sets B, E, 211, 213–216, 251–252</p> <p>TE: 55–56A, 57A–60B, 61A–64B, 65A–68B, 69A–72B, 77A–80B, 81A–84B, 85A–88B, 89A–92B, Reteaching 95–96, Sets B, D, 107–107A, 108–108C, 117A–120B, 121A–124B, 125A–128B, 129A–132B, 133A–136B, 137A–140B, 141A–144B, Reteaching 147–150, Sets C–E, 159–160A, 165A–168B, 169A–172B, 173A–176B, 177A–180B, 181A–184B, 185A–188B, Reteaching 199–202, Sets B, E, 211–211A, 213A–216B, 251–252A</p>
a. 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 $6 + 6 + 1 = 12 + 1 = 13$).	<p>SE: 55–56, 57–60, 61–64, 65–68, 69–72, 77–80, 81–84, 85–88, 89–92, Reteaching 95–96, Sets B, D, 107, 108, 117–120, 121–124, 125–128, 129–132, 133–136, 137–140, 141–144, Reteaching 148–149, Sets C–E, 159–160, 165–168, 169–172, 173–176, 177–180, 181–184, 185–188, Reteaching 200–201, Sets B, E, 211, 213–216, 251–252</p> <p>TE: 55–56A, 57A–60B, 61A–64B, 65A–68B, 69A–72B, 77A–80B, 81A–84B, 85A–88B, 89A–92B, Reteaching 95–96, Sets B, D, 107–107A, 108–108C, 117A–120B, 121A–124B, 125A–128B, 129A–132B, 133A–136B, 137A–140B, 141A–144B, Reteaching 147–150, Sets C–E, 159–160A, 165A–168B, 169A–172B, 173A–176B, 177A–180B, 181A–184B, 185A–188B, Reteaching 199–202, Sets B, E, 211–211A, 213A–216B, 251–252A</p>

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b. Fluently add and subtract within 10.	<p>SE: 55–56, 57–60, 61–64, 65–68, 69–72, 77–80, 81–84, 85–88, 89–92, Reteaching 95–96, Sets B, D, 107, 108, 117–120, 121–124, 125–128, 129–132, 133–136, 137–140, 141–144, Reteaching 148–149, Sets C–E, 159–160, 165–168, 169–172, 173–176, 177–180, 181–184, 185–188, Reteaching 200–201, Sets B, E, 211, 213–216, 251–252</p> <p>TE: 55–56A, 57A–60B, 61A–64B, 65A–68B, 69A–72B, 77A–80B, 81A–84B, 85A–88B, 89A–92B, Reteaching 95–96, Sets B, D, 107–107A, 108–108C, 117A–120B, 121A–124B, 125A–128B, 129A–132B, 133A–136B, 137A–140B, 141A–144B, Reteaching 147–150, Sets C–E, 159–160A, 165A–168B, 169A–172B, 173A–176B, 177A–180B, 181A–184B, 185A–188B, Reteaching 199–202, Sets B, E, 211–211A, 213A–216B, 251–252A</p>
Work with addition and subtraction equations	
<p>MGSE1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, <i>which of the following equations are true and which are false?</i> $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</p>	<p>SE: 4, 5–8, 9–12, 13–16, 17–20, 211, 212, 217–220, 221–224, 237–240, Reteaching 243–244, Sets A, D</p> <p>TE: 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 211–211A, 212–212C, 217A–220B, 221A–224B, 237A–240B, Reteaching 243–244, Sets A, D</p>
<p>MGSE1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \Delta$.</p>	<p>SE: 211, 212, 213–216, 221–224, 237–240, 243 Reteaching Set B</p> <p>TE: 211–211A, 212–212C, 213A–216B, 221A–224B, 237A–240B, 243 Reteaching Set B</p>

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Number and Operations in Base Ten 1.NBT	
Extend the counting sequence.	
MGSE1.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.	<p>SE: 283, 284, 289–292, 293–296, 297–300, 301–304, 305–308, 309–312, 315–316 Reteaching Sets B–D; 329–332, 333–336, 337–340, 373–376, 521–524, 525–528, 537–540, 565–568, 577–580, 585–588</p> <p>TE: 283–283A, 284–284C, 289A–292B, 293A–296B, 297A–300B, 301A–304B, 305A–308B, 309A–312B, 315–316 Reteaching Sets B–D; 329A–332B, 333A–336B, 337A–340B, 373A–376B, 521A–524B, 525A–528B, 537A–540B, 565A–568B, 577A–580B, 585A–588B</p>
Understand place value.	
MGSE1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:	<p>SE: 323–324, 333–336, 337–340, 341–344, 345–348, 349–352, 355–356 Reteaching Sets A–C; 364, 409–412, 413–416, 417–420, 457–460, 465–468, 469–472, 521–524, 525–528, 529–532, 533–536, 537–540</p> <p>TE: 323–324A, 333A–336B, 337A–340B, 341A–344B, 345A–348B, 349A–352B, 355–356 Reteaching Sets A–C; 364–364C, 409A–412B, 413A–416B, 417A–420B, 457A–460B, 465A–468B, 469A–472B, 521A–524B, 525A–528B, 529A–532B, 533A–536B, 537A–540B</p>
a. 10 can be thought of as a bundle of ten ones — called a “ten.”	<p>SE: 284, 285–288, 305–308, 309–312, 323–324, 325–328, 329–332, 355 Reteaching Set A; 405–408, 421–424, 425–428, 433–436, 573A–576</p> <p>TE: 284–284C, 285A–288B, 305A–308B, 309A–312B, 323–324A, 325A–328B, 329A–332B, 355 Reteaching Set A; , 405A–408B, 421A–424B, 425A–428B, 433A–436B, 573A–576B</p>
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	<p>SE: 325–328, 355 Reteaching Set A</p> <p>TE: 325A–328B, 355 Reteaching Set A</p>

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c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	<p>SE: 283, 284, 285–288, 297–300, 305–308, 315 Reteaching Set A; 329–332, 401–404, 451, 453–456, 461–464, 573–576</p> <p>TE: 283–283A, 284–284C, 285A–288B, 297A–300B, 305A–308B, 315 Reteaching Set A; , 329A–332B, 401A–404B, 451–451A, 453A–456B, 461A–464B, 573A–576B</p>
MGSE1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.	<p>SE: 363, 364, 365–368, 369–372, 373–376, 377–380, 381–384, 385–388, 392 Reteaching Sets C, D</p> <p>TE: 363–363A, 364–364C, 365A–368B, 369A–372B, 373A–376B, 377A–380B, 381A–384B, 385A–388B, 392 Reteaching Sets C, D</p>
Use place value understanding and properties of operations to add and subtract.	
MGSE1.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 ten (e.g., $24 + 9$, $13 + 10$, $27 + 40$), using concrete models or drawings and strategies based on place value, properties of operations, and/or relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	<p>SE: 399–400, 401–404, 409–412, 413–416, 417–420, 421–424, 425–428, 429–432, 433–436, 439–442 Reteaching Sets A, C–H; 452</p> <p>TE: 399–400A, 401A–404B, 409A–412B, 413A–416B, 417A–420B, 421A–424B, 425A–428B, 429A–432B, 433A–436B, 439–442 Reteaching Sets A, C–H; 452–452C</p>
MGSE1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	<p>SE: 363, 365–368, 369–372, 391 Reteaching Sets A, B; 399–400, 405–408, 429–432, 439 Reteaching Set B; 452, 453–456, 457–460, 461–464, 469–472, 473–476, 477–480, 484 Reteaching Set C</p> <p>TE: 363–363A, 365A–368B, 369A–372B, 391 Reteaching Sets A, B; 399–400A, 405A–408B, 429A–432B, 439–440 Reteaching Set B; 452–452C, 453A–456B, 457A–460B, 461A–464B, 469A–472B, 473A–476B, 477A–480B, 484 Reteaching Set C</p>

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MGSE1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range of 10-90 (positive or zero differences), 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. (e.g., $70 - 30$, $30 - 10$, $60 - 60$)	SE: 451, 452, 453-456, 457-460, 461-464, 465-468, 473-476, 477-480, 483-484 Reteaching Sets A, B, D TE: 451-451A, 452-452C, 453A-456B, 457A-460B, 461A-464B, 465A-468B, 473A-476B, 477A-480B, 483-484 Reteaching Sets A, B, D
MGSE1.NBT.7 Identify dimes, and understand ten pennies can be thought of as a dime. (Use dimes as manipulatives in multiple mathematical contexts.)	SE: 521-524 TE: 521A-524B
Measurement and Data 1.MD	
Measure lengths indirectly and by iterating length units	
MGSE1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	SE: 491-492, 493-496, 497-500, 505-508, Reteaching 511, Sets A, B TE: 491-492A, 493A-496B, 497A-500B, 505A-508B, Reteaching 511, Sets A, B
MGSE1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (Iteration)	SE: 491-492, 501-504, 505-508, Reteaching 512, Sets C, D, 557-560, 561-564, 581-584 TE: 491-492A, 501A-504B, 505A-508B, Reteaching 512, Sets C, D, 557A-560B, 561A-564B, 581A-584B
Tell and write time.	
MGSE1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.	SE: 520, 529-532, 533-536, 537-540, 541-544, Reteaching 547-548, Sets B-D TE: 520-520C, 529A-532B, 533A-536B, 537A-540B, 541A-544B, Reteaching 547-548, Sets B-D

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Represent and interpret data.	
MGSE1.MD.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.	SE: 251–252, 253–256, 257–260, 261–264, 265–268, 269–272, Reteaching 275–276, Sets A, B, 364, 520 TE: 251–252A, 253A–256B, 257A–260B, 261A–264B, 265A–268B, 269A–272B, Reteaching 275–276, Sets A, B, 364–364C, 520–520C
Geometry 1.G	
Reason with shapes and their attributes.	
MGSE1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	SE: 555–556, 557–560, 561–564, 565–568, 577–580, 581–584, 589–592, Reteaching 595–598, Sets A, B, E, G, H, 608 TE: 555–556A, 557A–560B, 561A–564B, 565A–568B, 577A–580B, 581A–584B, 589A–592B, Reteaching 595–598, Sets A, B, E, G, H, 608–608C
MGSE1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. <i>This is important for the future development of spatial relations which later connects to developing understanding of area, volume, and fractions.</i>	SE: 555–556, 569–572, 573–576, 585–588, 589–592, Reteaching 596–597, Sets C, D, F, H, 608 TE: 555–556A, 569–572B, 573–576B, 585A–588B, 589A–592B, Reteaching 595–598, Sets C, D, F, H, 608–608C
MGSE1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i> , <i>fourths</i> , and <i>quarters</i> , and use the phrases <i>half of</i> , <i>fourth of</i> , and <i>quarter of</i> . Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	SE: 607, 608, 609–612, 613–616, 617–620, 621–624, Reteaching 627–628, Sets A–D TE: 607–607A, 608–608C, 609A–612B, 613A–616B, 617A–620B, 621A–624B, Reteaching 627–628, Sets A–D

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Standards for Mathematical Practice	
<i>Students are expected to:</i>	
<p>1. Make sense of problems and persevere in solving them. In second grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. They may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They make conjectures about the solution and plan out a problem-solving approach.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 13–16, 21–24, 37–40, 41–44, 69–72, 77–80, 113–116, 117–120, 141–144, 149–152, 165–168, 169–172, 193–196, 197–200, 205–208</p>
<p>2. Reason abstractly and quantitatively. Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities. Second graders begin to know and use different properties of operations and objects.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 5–8, 13–16, 17–20, 21–24, 25–28, 33–36, 37–40, 41–44, 73–76, 97–100, 105–108, 109–112, 149–152, 153–156, 157–160</p>

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<p>3. Construct viable arguments and critique the reasoning of others. Second graders may construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They practice their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?”, “Explain your thinking,” and “Why is that true?” They not only explain their own thinking, but listen to others’ explanations. They decide if the explanations make sense and ask appropriate questions.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning—argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 29–32, 41–44, 69–72, 77–80, 93–96, 105–108, 117–120, 137–140, 141–144, 149–152, 157–160, 169–172, 189–192, 201–204, 217–220</p>
<p>4. Model with mathematics. In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 5–8, 9–12, 21–24, 29–32, 33–36, 41–44, 61–64, 65–68, 73–76, 77–80, 101–104, 109–112, 137–140, 141–144, 145–148</p>

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<p>5. Use appropriate tools strategically. In second grade, students consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be better suited. For instance, second graders may decide to solve a problem by drawing a picture rather than writing an equation.</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 29–32, 73–76, 93–96, 97–100, 117–120, 137–140, 189–192, 193–196, 209–212, 237–240, 245–248, 261–264, 305–308, 349–352, 377–380</p>
<p>6. Attend to precision. As children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 9–12, 37–40, 61–64, 77–80, 113–116, 197–200, 201–204, 253–256, 261–264, 301–304, 333–336, 341–344, 349–352, 353–356, 357–360</p>
<p>7. Look for and make use of structure. Second graders look for patterns. For instance, they adopt mental math strategies based on patterns (making ten, fact families, doubles).</p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 9–12, 13–16, 17–20, 25–28, 61–64, 65–68, 69–72, 77–80, 101–104, 145–148, 153–156, 161–164, 189–192, 201–204, 217–220</p>

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<p>8. Look for and express regularity in repeated reasoning. Students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract, they look for shortcuts, such as rounding up and then adjusting the answer to compensate for the rounding. Students continually check their work by asking themselves, does this make sense?</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 13–16, 21–24, 37–40, 41–44, 69–72, 77–80, 113–116, 117–120, 141–144, 149–152, 165–168, 169–172, 193–196, 197–200, 205–208</p>

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Operations and Algebraic Thinking 2.OA	
Represent and solve problems involving addition and subtraction.	
<p>MGSE2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. Problems include contexts that involve adding to, taking from, putting together/taking apart (part/part/whole) and comparing with unknowns in all positions.</p>	<p>SE: 4, 37–40, 41–44, Reteaching 50, Sets G, H, 77–80, Reteaching 84, Set D, 92, 113–116, 117–120, Reteaching 123–125, Sets A–F, 136, 141–144, 145–148, 165–168, 169–172, Reteaching 175–178, Sets B, C, G, H, 187, 188, 213–216, 217–220, Reteaching 226, Sets G, H, 236, 245–248, 257–260, 261–264, Reteaching 268–269, Sets C, F, 279, 280, 281–284, 285–288, 289–292, 293–296, 297–300, 309–312, Reteaching 315–318, Sets A–C, H, 341–344, 345–348, Reteaching 364–365, Sets B, C, 609–612, 613–616, 617–620, 621–624, 625–628, Reteaching 631–632, Sets A–D, 649–652, 653–656, 657–660, 661–664, Reteaching 668, 670, Sets B, D</p> <p>TE: 4–4C, 37A–40B, 41A–44B, Reteaching 49–50, Sets G, H, 77A–80B, Reteaching 84, Set D, 92–92C, 113A–116B, 117A–120B, Reteaching 123–126, Sets A–F, 136–136A, 141A–144B, 145A–148B, 165A–168B, 169A–172B, Reteaching 175–178, Sets B, C, G, H, 187–187A, 188–188C, 213A–216B, 217A–220B, Reteaching 225–226, Sets G, H, 236–236A, 245A–248B, 257A–260B, 261A–264B, Reteaching 267–270, Sets C, F, 279–279A, 280–280C, 281A–284B, 285A–288B, 289A–292B, 293A–296B, 297A–300B, 309A–312B, Reteaching 315–318, Sets A–C, H, 341A–344B, 345A–348B, Reteaching 363–366, Sets B, C, 609A–612B, 613A–616B, 617A–620B, 621A–624B, 625A–628B, Reteaching 631–632, Sets A–D, 649A–652B, 653A–656B, 657A–660B, 661A–664B, Reteaching 667–670, Sets B, D</p>

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Add and subtract within 20.	
MGSE2.OA.2 Fluently add and subtract within 20 using mental strategies. ⁸ By end of Grade 2, know from memory all sums of two one-digit numbers.	<p>SE: 3, 4, 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, 29–32, 33–36, 37–40, 41–44, 47–50 Reteaching Sets A–H, 60, 61–64, 65–68, 69–72, 73–76, 77–80, 83–84 Reteaching Sets A–D, 91, 301–304, 317 Reteaching Set F, 561–564, 595 Reteaching Set A</p> <p>TE: 3–3A, 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 21A–24B, 25A–28B, 29A–32B, 33A–36B, 37A–40B, 41A–44B, 47–50 Reteaching Sets A–H, 60–60A, 61A–64B, 65A–68B, 69A–72B, 73A–76B, 77A–80B, 83–84 Reteaching Sets A–D, 91–91A, 301A–304B, 317–318 Reteaching Set F, 561A–564B, 595–596 Reteaching Set A</p>
Work with equal groups of objects to gain foundations for multiplication.	
MGSE2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	<p>SE: 60, 61–64, 65–68, 83 Reteaching Set A</p> <p>TE: 60–60A, 61A–64B, 65A–68B, 83 Reteaching Set A</p>
MGSE2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	<p>SE: 69–72, 73–76, 77–80, 83–84 Reteaching Sets B–D, 92, 136, 577–580, 585–588, 589–592, 597–598 Reteaching Sets E, G, H</p> <p>TE: 69A–72B, 73A–76B, 77A–80B, 83–84 Reteaching Sets B–D, 92–92C, 135–136A, 577A–580B, 585A–588B, 589A–592B, 597–598 Reteaching Sets E, G, H</p>
Number and Operations in Base Ten 2.NBT	
Understand place value.	
MGSE2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:	<p>SE: 376, 381–384, 385–388, 389–392, 405–408, 409–412, 419–422 Reteaching Sets B, C, G</p> <p>TE: 376–376C, 381A–384B, 385A–388B, 389A–392B, 405A–408B, 409A–412B, 419–422 Reteaching Sets B, C, G</p>

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a. 100 can be thought of as a bundle of ten tens — called a “hundred.”	SE: 377–380, 393–396, 419–420 Reteaching Sets A, D TE: 377A–380B, 393A–396B, 419–420 Reteaching Sets A, D
b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	SE: 377–380, 381–384, 385–388, 419 Reteaching Set A TE: 377A–380B, 381A–384B, 385A–388B, 419–420 Reteaching Set A
MGSE2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.	SE: 329–332, 333–336, 337–340, 349–352, 353–356, 357–360, 363–366 Reteaching Sets A, B, D–F, 375, 376, 397–400, 401–404, 413–416, 421–422 Reteaching Sets E, F, H, 437–440, 477–480 TE: 329A–332B, 333A–336B, 337A–340B, 349A–352B, 353A–356B, 357A–360B, 363–366 Reteaching Sets A, B, D–F, 375–375A, 376–376C, 397A–400B, 401A–404B, 413A–416B, 421–422 Reteaching Sets E, F, H, 437A–440B, 477A–480B
MGSE2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	SE: 376, 381–384, 385–388, 389–392, 393–396, 419–420 Reteaching Sets B, C, D TE: 376–376C, 381A–384B, 385A–388B, 389A–392B, 393A–396B, 419–420 Reteaching Sets B, C, D
MGSE2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	SE: 375, 405–408, 409–412, 413–416, 422 Reteaching Sets G, H TE: 375–375A, 405A–408B, 409A–412B, 413A–416B, 421–422 Reteaching Sets G, H

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Use place value understanding and properties of operations to add and subtract.	
<p>MGSE2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<p>SE: 92, 93–96, 97–100, 101–104, 105–108, 109–112, 113–116, 117–120, 123–125 Reteaching Sets A–F, 136, 137–140, 141–144, 145–148, 149–152, 153–156, 157–160, 161–164, 165–168, 169–172, 175–178 Reteaching Sets A–H, 187, 188, 189–192, 193–196, 197–200, 201–204, 205–208, 209–212, 213–216, 217–220, 223–226 Reteaching Sets A–H, 236, 237–240, 241–244, 245–248, 249–252, 253–256, 257–260, 267–269 Reteaching Sets A–F, 279, 280, 281–284, 285–288, 289–292, 293–296, 297–300, 305–308, 315–318 Reteaching Sets A–D, G</p> <p>TE: 92–92C, 93A–96B, 97A–100B, 101A–104B, 105A–108B, 109A–112B, 113A–116B, 117A–120B, 123–126 Reteaching Sets A–F, 136–136A, 137A–140B, 141A–144B, 145A–148B, 149A–152B, 153A–156B, 157A–160B, 161A–164B, 165A–168B, 169A–172B, 175–178 Reteaching Sets A–H, 187–187A, 188–188C, 189A–192B, 193A–196B, 197A–200B, 201A–204B, 205A–208B, 209A–212B, 213A–216B, 217A–220B, 223–226 Reteaching Sets A–H, 236–236A, 237A–240B, 241A–244B, 245A–248B, 249A–252B, 253A–256B, 257A–260B, 267–270 Reteaching Sets A–F, 279–279A, 280–280C, 281A–284B, 285A–288B, 289A–292B, 293A–296B, 297A–300B, 305A–308B, 315–318 Reteaching Sets A–D, G</p>
<p>MGSE2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.</p>	<p>SE: 124–125 Reteaching Sets D, E; 136, 157–160, 161–164, 165–168, 169–172, 177–178 Reteaching Sets F–H; 279, 318 Reteaching Set G</p> <p>TE: 124–125 Reteaching Sets D, E; 136–136A, 157A–160B, 161A–164B, 165A–168B, 169A–172B, 177–178 Reteaching Sets F–H; 279–279A, 317–318 Reteaching Set G</p>

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<p>MGSE2.NBT.7 Add and subtract within 1000, 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.</p>	<p>SE: 432, 437–440, 441–444, 445–448, 449–452, 453–456, 457–460, 463–464 Reteaching Sets B–D, 472, 477–480, 481–484, 485–488, 489–492, 493–496, 499–200 Reteaching Sets B–D</p> <p>TE: 432–432A, 437–440B, 441–444B, 445–448B, 449–452B, 453–456B, 457–460B, 463–464 Reteaching Sets B–D, 472–472C, 477–480B, 481–484B, 485–488B, 489A–492B, 493A–496B, 499–200 Reteaching Sets B–D</p>
<p>MGSE2.NBT.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.</p>	<p>SE: 376, 397–400, 401–404, 413–416, Reteaching 421–422, Sets E, F, H, 433–436, Reteaching 463, Set A, 473–476, Reteaching 499, Set A</p> <p>TE: 376–376C, 397A–400B, 401A–404B, 413A–416B, Reteaching 421–422, Sets E, F, H, 433A–436B, Reteaching 463, Set A, 473A–476B, Reteaching 499, Set A</p>
<p>MGSE2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.</p>	<p>SE: 92, 93–96, 97–100, 101–104, 109–112, 117–120, Reteaching 123–125, Sets A–F, 137–140, 141–144, 145–148, 149–152, 153–156, 157–160, 161–164, 169–172, Reteaching 175–178, Sets A–H, 187, 188, 189–192, 193–196, 197–200, 201–204, 205–208, 209–212, 217–220, Reteaching 223–226, Sets A–F, H, 237–240, 241–244, 245–248, 249–252, 253–256, 261–264, Reteaching 267–269, Sets A–F, 309–312, Reteaching 318, Set H, 433–436, 437–440, 441–444, 445–448, 449–452, 453–456, 457–460, Reteaching 463–464, Sets A–D, 472, 473–476, 477–480, 481–484, 485–488, 489–492, 493–496, Reteaching 499–500, Sets A, B, C</p>

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(Continued) MGSE2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.	TE: 92–92C, 93A–96B, 97A–100B, 101A–104B, 109A–112B, 117A–120B, Reteaching 123–126, Sets A–F, 137A–140B, 141A–144B, 145A–148B, 149A–152B, 153A–156B, 157A–160B, 161A–164B, 169A–172B, Reteaching 175–178, Sets A–H, 187–187A, 188–188C, 189A–192B, 193A–196B, 197A–200B, 201A–204B, 205A–208B, 209A–212B, 217A–220B, Reteaching 223–226, Sets A–F, H, 237A–240B, 241A–244B, 245A–248B, 249A–252B, 253A–256B, 261A–264B, 2Reteaching 67–270, Sets A–F, 309A–312B, Reteaching 317–318, Set H, 433A–436B, 437A–440B, 441A–444B, 445A–448B, 449A–452B, 453A–456B, 457A–460B, Reteaching 463–464, Sets A–D, 472–472C, 473A–476B, 477A–480B, 481A–484B, 485A–488B, 489A–492B, 493A–496B, Reteaching 499–500, Sets A, B, C
Measurement and Data 2.MD	
Measure and estimate lengths in standard units.	
MGSE2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	SE: 513–516, 517–520, 521–524, 525–528, 529–532, 533–536, 541–544, Reteaching 547–550, Sets B–F, H, 560, 565–568, 569–572, 573–576, Reteaching 595–596, Sets B–D, 641–644, 645–648, Reteaching 667, Set A TE: 513A–516B, 517A–520B, 521A–524B, 525A–528B, 529A–532B, 533A–536B, 541A–544B, Reteaching 547–550, Sets B–F, H, 560–560C, 565A–568B, 569A–572B, 573A–576B, Reteaching 595–596, Sets B–D, 641A–644B, 645A–648B, Reteaching 667–668, Set A
MGSE2.MD.2 Measure the length of an object twice, using length units of different measurements; describe how the two measurements relate to the size of the unit chosen. Understand the relative size of units in different systems of measurement. <i>For example, an inch is longer than a centimeter.</i> (Students are not expected to convert between systems of measurement.)	SE: 521–524, 533–536, Reteaching 548–549, Sets C, F, 581–584, Reteaching 597, Set F TE: 521A–524B, 533A–536B, Reteaching 548–549, Sets C, F, 581A–584B, Reteaching 597–598, Set F

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MGSE2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.	SE: 509–512, 513–516, 517–520, 525–528, 529–532, 541–544, Reteaching 547–550, Sets A, B, D, E, H TE: 509A–512B, 513A–516B, 517A–520B, 525A–528B, 529A–532B, 541A–544B, Reteaching 547–550, Sets A, B, D, E, H
MGSE2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	SE: 537–540, 541–544, Reteaching 550, Sets G, H, 560 TE: 537A–540B, 541A–544B, Reteaching 549–550, Sets G, H, 560–560C
Relate addition and subtraction to length.	
MGSE2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	SE: 537–560, Reteaching 549–550, Sets F, G, 560, 609–612, 613–616, 617–620, 625–628, Reteaching 631–632, Sets A–D TE: 537A–540B, Reteaching 549–550, Sets F, G, 560–560C, 609A–612B, 613A–616B, 617A–620B, 625A–628B, Reteaching 631–632, Sets A–D
MGSE2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	SE: 621–624, 625–628, Reteaching 632, Sets C–D TE: 621A–624B, 625A–628B, Reteaching 632, Sets C–D
Work with time and money	
MGSE2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	SE: 328, 349–352, 353–356, 357–360, Reteaching 365–366, Sets D–F TE: 328–328A, 349A–352B, 353A–356B, 357A–360B, Reteaching 365–366, Sets D–F

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MGSE2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. <i>Example: If you have 2 dimes and 3 pennies, how many cents do you have?</i>	SE: 329–332, 333–336, 337–340, 341–344, 345–348, 376, 433–436, 473–476, 485–488 TE: 329A–332B, 333A–336B, 337A–340B, 341A–344B, 345A–348B, 376–376C, 433A–436B, 473A–476B, 485A–488B
Represent and interpret data	
MGSE2.MD.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.	SE: 640, 641–644, 645–648, Reteaching 667, Set A TE: 640–640C, 641A–644B, 645A–648B, Reteaching 667–668, Set A
MGSE2.MD.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.	SE: 640, 649–652, 653–656, 657–660, 661–664, Reteaching 668–670, Sets B–D TE: 640–640C, 649A–652B, 653A–656B, 657A–660B, 661A–664B, Reteaching 667–670, Sets B–D
Geometry 2.G	
Reason with shapes and their attributes.	
MGSE2.G.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.	SE: 560, 561–564, 565–568, 569–572, 573–576, Reteaching 595–596, Sets A–D TE: 560–560C, 561A–564B, 565A–568B, 569A–572B, 573A–576B, Reteaching 595–596, Sets A–D
MGSE2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	SE: 577–580, 589–592, Reteaching 597–598, Sets E, H TE: 577A–580B, 589A–592B, Reteaching 597–598, Sets E, H
MGSE2.G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words <i>halves</i> , <i>thirds</i> , <i>half of</i> , <i>a third of</i> , 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.	SE: 581–584, 585–588, 589–592, Reteaching 597–598, Sets F, G, H TE: 581A–584B, 585A–588B, 589A–592B, Reteaching 597–598, Sets F, G, H

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Standards for Mathematical Practice	
<i>Students are expected to:</i>	
<p>1. Make sense of problems and persevere in solving them. In third grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Third graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animation. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 5-8, 9-12, 17-20, 25-28, 41-44, 49-52, 61-64, 81-84, 89-92, 93-96, 97-100, 101-104, 117-120, 121-124, 124-148</p>
<p>2. Reason abstractly and quantitatively. Third graders should recognize that a number represents a specific quantity. They connect the quantity to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 9-12, 21-24, 45-48, 53-56, 61-64, 93-96, 97-100, 117-120, 121-124, 125-128, 129-132, 133-136, 141-144, 145-148, 149-152</p>

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<p>3. Construct viable arguments and critique the reasoning of others. In third grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning – argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 13-16, 25-28, 41-44, 45-48, 57-60, 61-64, 77-80, 101-104, 133-136, 141-144, 149-152, 173-176, 177-180, 189-192, 209-212</p>
<p>4. Model with mathematics. Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Third graders should evaluate their results in the context of the situation and reflect on whether the results make sense.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 5-8, 9-12, 17-20, 21-24, 25-28, 61-64, 85-88, 93-96, 125-128, 137-140, 141-144, 181-184, 189-192, 221-224, 225-228</p>

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<p>5. Use appropriate tools strategically. Third graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use graph paper to find all the possible rectangles that have a given perimeter. They compile the possibilities into an organized list or a table, and determine whether they have all the possible rectangles</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 13-16, 25-28, 49-52, 57-60, 81-84, 117-120, 181-184, 209-212, 233-236, 257-260, 317-320, 341-344, 353-356, 357-360, 381-384</p>
<p>6. Attend to precision. As third graders develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the area of a rectangle they record their answers in square units.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! Feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 17-20, 49-52, 57-60, 77-80, 37-140, 145-148, 149-152, 169-172, 217-220, 233-236, 253-256, 261-264, 269-272, 305-308, 309-312</p>
<p>7. Look for and make use of structure. In third grade, students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to multiply and divide (commutative and distributive properties).</p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 13-16, 25-28, 41-44, 45-48, 53-56, 77-80, 81-84, 85-88, 89-92, 101-104, 121-124, 129-132, 137-140, 169-172, 177-180</p>

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<p>8. Look for and express regularity in repeated reasoning. Students in third grade should notice repetitive actions in computation and look for more shortcut methods. For example, students may use the distributive property as a strategy for using products they know to solve products that they don't know. For example, if students are asked to find the product of 7×8, they might decompose 7 into 5 and 2 and then multiply 5×8 and 2×8 to arrive at $40 + 16$ or 56. In addition, third graders continually evaluate their work by asking themselves, "Does this make sense?"</p>	<p>Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and, as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Learning activities offer students opportunities to look for regularity in the way operations behave.</p> <p>SE/TE: 21-24, 53-56, 97-100, 101-104, 133-136, 145-148, 181-184, 185-188, 221-224, 225-228, 269-272, 293-296, 345-348, 353-356, 389-392</p>
Operations and Algebraic Thinking 3.OA	
Represent and solve problems involving multiplication and division.	
<p>MGSE3.OA.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as 5×7.</i></p>	<p>SE: 3, 4, 5-8, 9-12, 13-16, 25-28, Reteaching 31-32, Sets A-C, E, 41-44, 45-48, 49-52, 53-56, 57-60, Reteaching 67-68, Sets A-E, 185-188, Reteaching 197-198, Set E</p> <p>TE: 3-3A, 4-4C, 5A-8B, 9A-12B, 13A-16B, 25A-28B, Reteaching 31-32, Sets A-C, E, 41A-44B, 45A-48B, 49A-52B, 53A-56B, 57A-60B, Reteaching 67-68, Sets A-E, 185A-188B, Reteaching 197-198, Set E</p>
<p>MGSE3.OA.2 Interpret whole number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares (How many in each group?), or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each (How many groups can you make?). <i>For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.</i></p>	<p>SE: 4, 17-20, 21-24, 25-28, Reteaching 32, Sets D, E, 185-188, Reteaching 197-198, Set E</p> <p>TE: 4-4C, 17A-20B, 21A-24B, 25A-28B, Reteaching 32, Sets D, E, 185A-188B, Reteaching 197-198, Set E</p>

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<p>MGSE3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p>	<p>SE: 3, 4, 5–8, 9–12, 13–16, 17–20, 21–24, 25–28, Reteaching 31–32, Sets A–E, 39–40, 41–44, 45–48, 49–52, 53–56, 57–60, 61–64, Reteaching 67–68, Sets A–F, 76, 81–84, 85–88, 89–92, 93–96, 97–100, Reteaching 107–108, Sets B–E, 117–120, 121–124, 125–128, 129–132, 133–136, 137–140, 141–144, 145–148, 149–152, Reteaching 155–158, Sets A–I, 167, 168, 177–180, 181–184, 185–188, 189–192, Reteaching 196–198, Sets C–F, 252, 253–256, 257–260, 261–264, 265–268, 269–272, Reteaching 275–278, Sets A–D, 385–388, Reteaching 399, Set B, 408, 561–564, Reteaching 574, Set H, 617–620, Reteaching 639, Set A</p> <p>TE: 3–3A, 4–4C, 5A–8B, 9A–12B, 13A–16B, 17A–20B, 21A–24B, 25A–28B, Reteaching 31–32, Sets A–E, 39–40A, 41A–44B, 45A–48B, 49A–52B, 53A–56B, 57A–60B, 61A–64B, Reteaching 67–68, Sets A–F, 76–76C, 81A–84B, 85A–88B, 89A–92B, 93A–96B, 97A–100B, Reteaching 107–108, Sets B–E, 117A–120B, 121A–124B, 125A–128B, 129A–132B, 133A–136B, 137A–140B, 141A–144B, 145A–148B, 149A–152B, Reteaching 155–158, Sets A–I, 167–167A, 168–168C, 177A–180B, 181A–184B, 185A–188B, 189A–192B, Reteaching 195–198, Sets C–F, 252–252C, 253A–256B, 257A–260B, 261A–264B, 265A–268B, 269A–272B, Reteaching 275–278, Sets A–D, 385A–388B, Reteaching 399, Set B, 408–408C, 561A–564B, Reteaching 573–574, Set H, 617A–620B, Reteaching 639, Set A</p>
<p>MGSE3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers using the inverse relationship of multiplication and division. <i>For example, determine the unknown number that makes the equation true in each of the equations, $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$.</i></p>	<p>SE: 141–144, 145–148, Reteaching 157–158, Sets G, H, 168, 221–224, Reteaching 240, Set D</p> <p>TE: 141A–144B, 145A–148B, Reteaching 157–158, Sets G, H, 168–168C, 221A–224B, Reteaching 239–240, Set D</p>

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Understand properties of multiplication and the relationship between multiplication and division.	
<p>MGSE3.OA.5 Apply properties of operations as strategies to multiply and divide. <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)</i></p>	<p>SE: 4, 13–16, Reteaching 31–32, Set C, 49–52, Reteaching 67, Set C, 75, 76, 77–80, 81–84, 85–88, 89–92, 93–96, 97–100, 101–104, Reteaching 107–108, Sets A–F, 137–140, Reteaching 157, Set F, 389–392, Reteaching 400, Set C</p> <p>TE: 4–4C, 13A–16B, Reteaching 31–32, Set C, 49A–52B, Reteaching 67, Set C, 75–75A, 76–76C, 77A–80B, 81A–84B, 85A–88B, 89A–92B, 93A–96B, 97A–100B, 101A–104B, Reteaching 107–108, Sets A–F, 137A–140B, Reteaching 157–158, Set F, 389A–392B, Reteaching 400, Set C</p>
<p>MGSE3.OA.6 Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i></p>	<p>SE: 117–120, 121–124, 125–128, 129–132, 137–140, 141–144, Reteaching 155–157, Sets A–D, F, G</p> <p>TE: 117A–120B, 121A–124B, 125A–128B, 129A–132B, 137A–140B, 141A–144B, Reteaching 155–158, Sets A–D, F, G</p>

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Multiply and divide within 100	
<p>MGSE3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</p>	<p>SE: 49–52, Reteaching 67, Set C, 76, 77–80, 81–84, 85–88, 89–92, 93–96, 97–100, Reteaching 107–108, Sets A–E, 117–120, 121–124, 125–128, 129–132, 133–136, 137–140, 141–144, 145–148, Reteaching 155–158, Sets A–H, 167, 168, 169–172, 173–176, 177–180, 181–184, 185–188, 189–192, Reteaching 195–198, Sets A–F, 221–224, 225–228, 229–232, 233–236, Reteaching 240–242, Sets D–G, 297–300, 313–316, Reteaching 324–325, Sets C, G, 345–348, 349–352, Reteaching 368–369, Sets C, D, 413–416, 417–420, 421–424, Reteaching 427–428, Sets B–D, 561–564, Reteaching 574, Set H, 617–620, 625–628, 629–632, Reteaching 639–640, Sets A, C</p> <p>TE: 49A–52B, Reteaching 67, Set C, 76–76C, 77A–80B, 81A–84B, 85A–88B, 89A–92B, 93A–96B, 97A–100B, Reteaching 107–108, Sets A–E, 117A–120B, 121A–124B, 125A–128B, 129A–132B, 133A–136B, 137A–140B, 141A–144B, 145A–148B, Reteaching 155–158, Sets A–H, 167–167A, 168–168C, 169A–172B, 173A–176B, 177A–180B, 181A–184B, 185A–188B, 189A–192B, Reteaching 195–198, Sets A–F, 221A–224B, 225A–228B, 229A–232B, 233A–236B, Reteaching 239–242, Sets D–G, 297A–300B, 313A–316B, Reteaching 323–326, Sets C, G, 345A–348B, 349A–352B, Reteaching 367–370, Sets C, D, 413A–416B, 417A–420B, 421A–424B, Reteaching 427–428, Sets B–D, 561A–564B, Reteaching 573–574, Set H, 617A–620B, 625A–628B, 629A–632B, Reteaching 639–640, Sets A, C</p>

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Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
<p>MGSE3.OA.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.</p>	<p>SE: 149–152, Reteaching 158, Set I, 168, 253–256, 265–268, Reteaching 275–277, Sets A, C, 287–288, 289–292, 297–300, 301–304, 305–308, 313–316, 317–320, Reteaching 323–326, Sets A, C–E, G, H, 336, 337–340, 341–344, 345–348, 349–352, 353–356, 357–360, 361–364, Reteaching 367–370, Sets A–G, 381–384, Reteaching 399, Set A, 407, 408, 409–412, 413–416, 417–420, 421–424, Reteaching 427–428, Sets A–D, 621–624, Reteaching 639, Set B</p> <p>TE: 149A–152B, Reteaching 157-158, Set I, 168–168C, 253A–256B, 265A–268B, Reteaching 275–278, Sets A, C, 287–288A, 289A–292B, 297A–300B, 301A–304B, 305A–308B, 313A–316B, 317A–320B, Reteaching 323–326, Sets A, C–E, G, H, 336–336C, 337A–340B, 341A–344B, 345A–348B, 349A–352B, 353A–356B, 357A–360B, 361A–364B, Reteaching 367–370, Sets A–G, 381A–384B, Reteaching 399, Set A, 407–407A, 408–408C, 409A–412B, 413A–416B, 417A–420B, 421A–424B, Reteaching 427–428, Sets A–D, 621A–624B, Reteaching 639, Set B</p>
<p>MGSE3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</i></p>	<p>SE: 41–44, 45–48, 53–56, 57–60, Reteaching 67–68, Sets A–E, 81–84, 85–88, 89–92, Reteaching 107–108, Sets B–D, 133–136, Reteaching 157, Set E, 169–172, 189–192, Reteaching 195–198, Sets A, F, 293–296, Reteaching 323, Set B, 393–396, Reteaching 400, Set D</p> <p>TE: 41A–44B, 45A–48B, 53A–56B, 57A–60B, Reteaching 67–68, Sets A–E, 81A–84B, 85A–88B, 89A–92B, Reteaching 107–108, Sets B–D, 133A–136B, Reteaching 157–158, Set E, 169A–172B, 189A–192B, Reteaching 195–198, Sets A, F, 293A–296B, Reteaching 323–324, Set B, 393A–396B, Reteaching 400, Set D</p>

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Number and Operations in Base Ten 3.NBT	
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
MGSE3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	<p>SE: 287–288, 305–308, 309–312, Reteaching 324–325, Sets E, F, 336</p> <p>TE: 287–288A, 305A–308B, 309A–312B, Reteaching 323–326, Sets E, F, 336–336C</p>
MGSE3.NBT.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.	<p>SE: 287–288, 289–292, 297–300, 301–304, 309–312, 313–316, 317–320, Reteaching 323–326, Sets A, C, D, F–H, 335, 336, 337–340, 341–344, 345–348, 349–352, 353–356, 357–360, 361–364, Reteaching 367–370, Sets A–G, 408, 409–412, 417–420, 421–424, Reteaching 427–428, Sets A, C, D, 541–544, Reteaching 572, Set C, 621–624, Reteaching 639, Set B</p> <p>TE: 287–288A, 289A–292B, 297A–300B, 301A–304B, 309A–312B, 313A–316B, 317A–320B, Reteaching 323–326, Sets A, C, D, F–H, 335–335A, 336–336C, 337A–340B, 341A–344B, 345A–348B, 349A–352B, 353A–356B, 357A–360B, 361A–364B, Reteaching 367–370, Sets A–G, 408–408C, 409A–412B, 417A–420B, 421A–424B, Reteaching 427–428, Sets A, C, D, 541A–544B, Reteaching 571–572, Set C, 621A–624B, Reteaching 639, Set B</p>
MGSE3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	<p>SE: 379–380, 381–384, 385–388, 389–392, 393–396, Reteaching 399–400, Sets A–D</p> <p>TE: 379–380A, 381A–384B, 385A–388B, 389A–392B, 393A–396B, Reteaching 399–400, Sets A–D</p>

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Number and Operations – Fractions 3.NF	
Develop understanding of fractions as numbers.	
<p>MGSE3.NF.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts (unit fraction); understand a fraction a/b as the quantity formed by a parts of size $1/b$. For example, $3/4$ means there are three $1/4$ parts, so $3/4 = 1/4 + 1/4 + 1/4$.</p>	<p>SE: 435–436, 437–440, 441–444, 445–448, 465–468, Reteaching 471–474, Sets A–C, H, 484, 585–588, 589–592, Reteaching 603, Sets A, B</p> <p>TE: 435–436A, 437A–440B, 441A–444B, 445A–448B, 465A–468B, Reteaching 471–474, Sets A–C, H, 484–484C, 585A–588B, 589A–592B, Reteaching 603, Sets A, B</p>
<p>MGSE3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p>	<p>SE: 435–436, 449–452, 453–456, 457–460, 461–464, Reteaching 472–474, Sets D–G</p> <p>TE: 435–436A, 449A–452B, 453A–456B, 457A–460B, 461A–464B, Reteaching 471–474, Sets D–G</p>
<p>a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$. Recognize that a unit fraction $1/b$ is located $1/b$ whole unit from 0 on the number line.</p>	<p>SE: 435–436, 449–452, 453–456, 457–460, 461–464, Reteaching 472–474, Sets D–G</p> <p>TE: 435–436A, 449A–452B, 453A–456B, 457A–460B, 461A–464B, Reteaching 471–474, Sets D–G</p>
<p>b. Represent a non-unit fraction a/b on a number line diagram by marking off a lengths of $1/b$ (unit fractions) from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the non-unit fraction a/b on the number line.</p>	<p>SE: 449–452, 453–456, 457–460, 461–464, Reteaching 472–474, Sets D–G</p> <p>TE: 449A–452B, 453A–456B, 457A–460B, 461A–464B, Reteaching 471–474, Sets D–G</p>
<p>MGSE3.NF.3 Explain equivalence of fractions through reasoning with visual fraction models. Compare fractions by reasoning about their size.</p>	<p>SE: 445–448, Reteaching 472, Set C, 483, 484, 485–488, 489–492, 493–496, 497–500, 501–504, 505–508, 509–512, 513–516, Reteaching 519–522, Sets A–H</p> <p>TE: 445A–448B, Reteaching 471–472, Set C, 483–483A, 484–484C, 485A–488B, 489A–492B, 493A–496B, 497A–500B, 501A–504B, 505A–508B, 509A–512B, 513A–516B, Reteaching 519–522, Sets A–H</p>

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a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	SE: 483, 484, 485–488, 489–492, 505–508, 509–512, Reteaching 519–522, Sets A, B, F, G TE: 483–483A, 484–484C, 485A–488B, 489A–492B, 505A–508B, 509A–512B, Reteaching 519–522, Sets A, B, F, G
b. Recognize and generate simple equivalent fractions with denominators of 2, 3, 4, 6, and 8, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.	SE: 483, 485–488, 489–492, 513–516, Reteaching 519–522, Sets A, B, H TE: 483–483A, 485A–488B, 489A–492B, 513A–516B, Reteaching 519–522, Sets A, B, H
c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 6/2$ (3 wholes is equal to six halves); recognize that $3/1 = 3$; locate $4/4$ and 1 at the same point of a number line diagram.</i>	SE: 445–448, Reteaching 472, Set C, 484, 509–512, Reteaching 522, Set G TE: 445A–448B, Reteaching 471–472, Set C, 484–484C, 509A–512B, Reteaching 521–522, Set G
d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.	SE: 483, 493–496, 497–500, 501–504, 513–516, Reteaching 520–522, Sets C–E, H TE: 483–483A, 493A–496B, 497A–500B, 501A–504B, 513A–516B, Reteaching 520–522, Sets C–E, H
Measurement and Data 3.MD	
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	
MGSE3.MD.1 Tell and write time to the nearest minute and measure elapsed 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, drawing a pictorial representation on a clock face, etc.	SE: 531–532, 533–536, 537–540, 541–544, 565–568, Reteaching 571–574, Sets A–C, I TE: 531–532A, 533A–536B, 537A–540B, 541A–544B, 565A–568B, Reteaching 571–574, Sets A–C, I

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<p>MGSE3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</p>	<p>SE: 309–312, Reteaching 325, Set F, 531–532, 545–548, 549–552, 553–556, 557–560, 561–564, Reteaching 572–574, Sets D–H</p> <p>TE: 309A–312B, Reteaching 325–326, Set F, 531–532A, 545A–548B, 549A–552B, 553A–556B, 557A–560B, 561A–564B, Reteaching 571–574, Sets D–H</p>
Represent and interpret data.	
<p>MGSE3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i></p>	<p>SE: 251, 252, 253–256, 257–260, 261–264, 265–268, 269–272, Reteaching 275–278, Sets A–D, 417–420, Reteaching 428, Set C</p> <p>TE: 251–251A, 252–252C, 253A–256B, 257A–260B, 261A–264B, 265A–268B, 269A–272B, Reteaching 275–278, Sets A–D, 417A–420B, Reteaching 428, Set C</p>
<p>MGSE3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.</p>	<p>SE: 435–436, 457–460, 461–464, Reteaching 473–474, Sets F, G</p> <p>TE: 435–436A, 457A–460B, 461A–464B, Reteaching 473–474, Sets F, G</p>
Geometric Measurement: understand concepts of area and relate area to multiplication and to addition.	
<p>MGSE3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.</p>	<p>SE: 252</p> <p>TE: 252–252C</p>
<p>a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.</p>	<p>SE: 207–208, 209–212, 213–216, 217–220, Reteaching 239–240, Sets A–C</p> <p>TE: 207–208A, 209A–212B, 213A–216B, 217A–220B, Reteaching 239–240, Sets A–C</p>

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b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	SE: 209–212, 213–216, 217–220, Reteaching 239–240, Sets A–C, 593–596, Reteaching 604, Set C TE: 209A–212B, 213A–216B, 217A–220B, Reteaching 239–240, Sets A–C, 593A–596B, Reteaching 604, Set C
MGSE3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	SE: 207–208, 209–212, 213–216, 217–220, Reteaching 239–240, Sets A–C TE: 207–208A, 209A–212B, 213A–216B, 217A–220B, Reteaching 239–240, Sets A–C
MGSE3.MD.7 Relate area to the operations of multiplication and addition.	SE: 101–104, Reteaching 108, Set F, 252 TE: 101A–104B, Reteaching 108, Set F, 252–252C
a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	SE: 221–224, 233–236, Reteaching 242, Set G TE: 221A–224B, 233A–236B, Reteaching 241–242, Set G
b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	SE: 221–224, 233–236, Reteaching 242, Set G, 597–600, Reteaching 604, Set D, 625–628, 629–632, Reteaching 640, Set C TE: 221A–224B, 233A–236B, Reteaching 241–242, Set G, 597A–600B, Reteaching 604, Set D, 625A–628B, 629A–632B, Reteaching 640, Set C
c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	SE: 225–228, Reteaching 241, Set E TE: 225A–228B, Reteaching 241–242, Set E

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Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	
MGSE3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	<p>SE: 611–612, 613–616, 617–620, 621–624, 625–628, 629–632, 633–636, Reteaching 639–640, Sets A–D</p> <p>TE: 611–612A, 613A–616B, 617A–620B, 621A–624B, 625A–628B, 629A–632B, 633A–636B, Reteaching 639–640, Sets A–D</p>
Geometry 3.G	
Reason with shapes and their attributes.	
MGSE3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	<p>SE: 583, 584, 585–588, 589–592, 593–596, 597–600, Reteaching 603–604, Sets A–D</p> <p>TE: 583–583A, 584–584C, 585A–588B, 589A–592B, 593A–596B, 597A–600B, Reteaching 603–604, Sets A–D</p>
MGSE3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.</i>	<p>SE: 435–436, 437–440, 441–444, Reteaching 471, Sets A, B, 584, 585–588, 589–592, Reteaching 603, Sets A, B</p> <p>TE: 435–436A, 437A–440B, 441A–444B, Reteaching 471–472, Sets A, B, 584–584C, 585A–588B, 589A–592B, Reteaching 603, Sets A, B</p>

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Standards for Mathematical Practice	
<i>Students are expected to:</i>	
<p>1. Make sense of problems and persevere in solving them. In fourth grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Fourth graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 13–16, 21–24, 49–52, 53–56, 65–68, 81–84, 105–108, 109–112, 153–156, 205–208, 233–236, 237–240, 245–248, 261–264, 293–296</p>
<p>2. Reason abstractly and quantitatively. Fourth graders should recognize that a number represents a specific quantity. They connect the quantity to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions, record calculations with numbers, and represent or round numbers using place value concepts.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 5–8, 9–12, 13–16, 17–20, 21–24, 41–44, 57–60, 61–64, 65–68, 81–84, 85–88, 105–108, 129–132, 133–136, 137–140</p>

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<p>3. Construct viable arguments and critique the reasoning of others. In fourth grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain their thinking and make connections between models and equations. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning— argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 9–12, 17–20, 21–24, 37–40, 41–44, 45–48, 49–52, 57–60, 61–6, 85–88, 101–104, 137–140, 149–152, 177–180, 181–184</p>
<p>4. Model with mathematics. Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fourth graders should evaluate their results in the context of the situation and reflect on whether the results make sense.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 5–8, 13–16, 65–68, 89–92, 93–96, 109–112, 133–136, 141–144, 145–148, 153–156, 169–172, 177–180, 181–184, 185–188, 193–196</p>

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<p>5. Use appropriate tools strategically. Fourth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use graph paper or a number line to represent and compare decimals and protractors to measure angles. They use other measurement tools to understand the relative size of units within a system and express measurements given in larger units in terms of smaller units.</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 17–20, 45–48, 53–56, 97–100, 133–136, 193–196, 245–248, 293–296, 297–300, 313–316, 317–320, 333–336, 337–340, 345–348, 353–356</p>
<p>6. Attend to precision. As fourth graders develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, they use appropriate labels when creating a line plot.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 21–24, 37–40, 97–100, 105–108, 153–156, 197–200, 245–248, 269–272, 305–308, 345–348, 393–396, 417–420, 449–452, 465–468, 481–484</p>
<p>7. Look for and make use of structure. In fourth grade, students look closely to discover a pattern or structure. For instance, students use properties of operations to explain calculations (partial products model). They relate representations of counting problems such as tree diagrams and arrays to the multiplication principal of counting. They generate number or shape patterns that follow a given rule.</p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 5–8, 37–40, 45–48, 53–56, 57–60, 61–64, 81–84, 89–92, 93–96, 97–100, 101–104, 129–132, 141–144, 145–148, 149–152</p>

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<p>8. Look for and express regularity in repeated reasoning. Students in fourth grade should notice repetitive actions in computation to make generalizations. Students use models to explain calculations and understand how algorithms work. They also use models to examine patterns and generate their own algorithms. For example, students use visual fraction models to write equivalent fractions.</p>	<p>Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and, as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Learning activities offer students opportunities to look for regularity in the way operations behave.</p> <p>SE/TE: 9–12, 49–52, 269–272, 309–312, 361–364, 365–368, 389–392, 421–424, 461–464, 481–484, 485–488, 489–492, 497–500, 521–524, 557–560</p>
Operations and Algebraic Thinking 4.OA	
Use the four operations with whole numbers to solve problems.	
<p>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.</p>	<p>SE: 223–224, 225–228, 229–232, Reteaching 251, Set A TE: 223–224A, 225A–228B, 229A–232B, Reteaching 251, Set A</p>
<p>a. 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.</p>	<p>SE: 223–224, 225–228, 229–232, Reteaching 251, Set A TE: 223–224A, 225A–228B, 229A–232B, Reteaching 251, Set A</p>
<p>b. Represent verbal statements of multiplicative comparisons as multiplication equations.</p>	<p>SE: 223–224, 225–228, 229–232, Reteaching 251, Set A TE: 223–224A, 225A–228B, 229A–232B, Reteaching 251, Set A</p>

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<p>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.</p>	<p>SE: 85–88, 223–224, 225–228, 229–232, 233–236, 237–240, 241–244, 245–248, Reteaching 251–252, Sets A, B, D, 260</p> <p>TE: 85A–88B, 223–224A, 225A–228B, 229A–232B, 233A–236B, 237A–240B, 241A–244B, 245A–248B, Reteaching 251–252, Sets A, B, D, 260–260C</p>
<p>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.</p>	<p>SE: 41–44, 45–48, 49–52, 53–56, 57–60, 61–64, 65–68, Reteaching 71–72, Sets B, F, 80, 85–88, 97–100, 105–108, 109–112, Reteaching 115, 117–118, Sets B, G, H, 137–140, 141–144, 149–152, Reteaching 159, Set C, 168, 173–176, 177–180, 181–184, 193–196, 197–120, 205–208, Reteaching 211–214, Sets B, H, 233–236, 237–240, 241–244, 245–248, Reteaching 251, Set B, 260, 260, 481–484, 485–488, 489–492, 493–496, 497–500, 501–504, 505–508, 529–532, 569–572</p> <p>TE: 41A–44B, 45A–48B, 49A–52B, 53A–56B, 57A–60B, 61A–64B, 65A–68B, Reteaching 71–72, Sets B, F, 80–80C, 85A–88B, 97A–100B, 105A–108B, 109A–112B, Reteaching 115, 117–118, Sets B, G, H, 137A–140B, 141A–144B, 149A–152B, Reteaching 159–160, Set C, 168–168C, 173A–176B, 177A–180B, 181A–184B, 193A–196B, 197A–120B, 205A–208B, Reteaching 211–214, Sets B, H, 233A–236B, 237A–240B, 241A–244B, 245A–248B, Reteaching 251, Set B, 260–260A, 260–260C, 481A–484B, 485A–488B, 489A–492B, 493A–496B, 497A–500B, 501A–504B, 505A–508B, 529A–532B, 569A–572B</p>
Gain familiarity with factors and multiples.	
<p>MGSE4.OA.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.</p>	<p>SE: 260, 261–264, 265–268, 269–272, 273–276, 277–280, Reteaching 283–284, Sets A–E, 305–308, 521–524, 525–528</p> <p>TE: 260–260C, 261A–264B, 265A–268B, 269A–272B, 273A–276B, 277A–280B, Reteaching 283–284, Sets A–E, 305A–308B, 521A–524B, 525A–528B</p>

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Generate and analyze patterns.	
MGSE4.OA.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. Explain informally why the pattern will continue to develop in this way. <i>For 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.</i>	SE: 519–520, 521–524, 525–528, 529–532, 533–536, Reteaching 539–540, Sets A–D, 589–592 TE: 519–520A, 521A–524B, 525A–528B, 529A–532B, 533A–536B, Reteaching 539–540, Sets A–D, 589A–592B
Number and Operations in Base Ten 4.NBT	
Generalize place value understanding for multi-digit whole numbers.	
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. <i>For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.</i>	SE: 4, 9–12, 21–24, Reteaching 27, Set B TE: 4–4C, 9A–12B, 21A–24B, Reteaching 27, Set B
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.	SE: 3, 4, 5–8, 13–16, 21–24, Reteaching 27, Sets A, C, 35–36 TE: 3–3A, 4–4C, 5A–8B, 13A–16B, 21A–24B, Reteaching 27, Sets A, C, 35–36A
MGSE4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	SE: 4, 17–20, 21–24, Reteaching 28, Sets D, E TE: 4–4C, 17A–20B, 21A–24B, Reteaching 28, Sets D, E
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
MGSE4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	SE: 35–36, 37–40, 41–44, 45–48, 49–52, 53–56, 57–60, 61–64, 65–68, Reteaching 71–72, Sets A–E, 80, 233–236, 237–240, 241–244, 521–524, 565–568 TE: 35–36A, 37A–40B, 41A–44B, 45A–48B, 49A–52B, 53A–56B, 57A–60B, 61A–64B, 65A–68B, Reteaching 71–72, Sets A–E, 80–80C, 233A–236B, 237A–240B, 241A–244B, 521A–524B, 565A–568B

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<p>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.</p>	<p>SE: 79, 80, 81–84, 89–92, 93–96, 97–100, 101–104, 105–108, 109–112, Reteaching 115–118, Sets A–G, 127–128, 129–132, 133–136, 137–140, 141–144, 145–148, 149–152, 153–156, 1 Reteaching 59–160, Sets A–F, 168, 173–176, 177–180, 223–224, 225–228, 229–232, 233–236, 237–240, 241–244, 245–248, Reteaching 251–252, Sets A, B, D, 261–264, 265–268, 269–272, 273–276, 277–280, Reteaching 283–284, Sets A–E, 301–304, 313–316, 525–528</p> <p>TE: 79–79A, 80–80C, 81A–84B, 89A–92B, 93A–96B, 97A–100B, 101A–104B, 105A–108B, 109A–112B, Reteaching 115–118, Sets A–G, 127–128A, 129A–132B, 133A–136B, 137A–140B, 141A–144B, 145A–148B, 149A–152B, 153A–156B, Reteaching 159–160, Sets A–F, 168–168C, 173A–176B, 177A–180B, 223–224A, 225A–228B, 229A–232B, 233A–236B, 237A–240B, 241A–244B, 245A–248B, Reteaching 251–252, Sets A, B, D, 261A–264B, 265A–268B, 269A–272B, 273A–276B, 277A–280B, Reteaching 283–284, Sets A–E, 301A–304B, 313A–316B, 525A–528B</p>
<p>MGSE4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit 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.</p>	<p>SE: 167, 168, 169–172, 173–176, 177–180, 181–184, 185–188, 189–192, 193–196, 197–200, 201–204, 205–208, Reteaching 211–214, Sets A, C, H, 229–232, 233–236, 237–240, 241–244, 245–248, Reteaching 251–252, Sets A, B, D, 260, 305–308, 525–528, 529–532</p> <p>TE: 167–167A, 168–168C, 169A–172B, 173A–176B, 177A–180B, 181A–184B, 185A–188B, 189A–192B, 193A–196B, 197A–200B, 201A–204B, 205A–208B, Reteaching 211–214, Sets A, C, H, 229A–232B, 233A–236B, 237A–240B, 241A–244B, 245A–248B, Reteaching 251–252, Sets A, B, D, 260–260C, 305A–308B, 525A–528B, 529A–532B</p>

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Number and Operations – Fractions 4.NF	
Extend understanding of fraction equivalence and ordering.	
<p>MGSE4.NF.1 Explain why two or more fractions are equivalent $a/b = n \times a \quad n \times b$ ex: $1/4 = 3 \times 1 \quad 3 \times 4$ by using visual fraction models. Focus attention on how the number and size of the parts differ even though the fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p>	<p>SE: 259, 291–292, 293–296, 297–300, 301–304, 305–308, 313–316, 317–320, Reteaching 323–324, Sets A, B, 421–424, 553–556</p> <p>TE: 259–259A, 291–292A, 293A–296B, 297A–300B, 301A–304B, 305A–308B, 313A–316B, 317A–320B, Reteaching 323–324, Sets A, B, 421A–424B, 553A–556B</p>
<p>MGSE4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by using visual fraction models, by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions.</p>	<p>SE: 259, 309–312, 313–316, 317–320, Reteaching 324, Sets C, D, 332, 415, 416, 421–424</p> <p>TE: 259–259A, 309A–312B, 313A–316B, 317A–320B, Reteaching 324, Sets C, D, 332–332A, 415–415A, 416–416C, 421A–424B</p>
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	
<p>MGSE4.NF.3 Understand a fraction a/b with a numerator >1 as a sum of unit fractions $1/b$.</p>	<p>SE: 331, 332, 333–336, 337–340, 341–344, 345–348, 349–352, 353–356, 357–360, 361–364, 365–368, 369–372, Reteaching 375–376, Sets A-F, 397–400, 401–404, Reteaching 407, Set C, 416, 417–420, 421–424, 425–428, 429–432, Reteaching 435–436, Sets A-D, 481–484, 485–488, 489–492, 553–556, 569–572</p> <p>TE: 331–331A, 332–332C, 333A–336B, 337A–340B, 341A–344B, 345A–348B, 349A–352B, 353A–356B, 357A–360B, 361A–364B, 365A–368B, 369A–372B, Reteaching 375–376, Sets A-F, 397A–400B, 401A–404B, Reteaching 407, Set C, 416–416C, 417A–420B, 421A–424B, 425A–428B, 429A–432B, Reteaching 435–436, Sets A-D, 481A–484B, 485A–488B, 489A–492B, 553A–556B, 569A–572B</p>

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a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	<p>SE: 331, 332, 333–336, 341–344, 345–348, 349–352, 353–356, 369–372, Reteaching 375–376, Sets A, C, D</p> <p>TE: 331–331A, 332–332C, 333A–336B, 341A–344B, 345A–348B, 349A–352B, 353A–356B, 369A–372B, Reteaching 375–376, Sets A, C, D</p>
b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. <i>Examples:</i> $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.	<p>SE: 332, 337–340, Reteaching 375, Sets A, B, 416, 553–556</p> <p>TE: 332–332A, 337A–340B, Reteaching 375, Sets A, B, 416–416C, 553A–556B</p>
c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	<p>SE: 331, 332, 357–360, 361–364, 365–368, 369–372, Reteaching 376, Set E, Reteaching 407, Set C, 429–432, 569–572</p> <p>TE: 331–331A, 332–332C, 357A–360B, 361A–364B, 365A–368B, 369A–372B, Reteaching 376, Set E, Reteaching 407, Set C, 429A–432B, 569A–572B</p>
d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	<p>SE: 331, 332, 333–336, 341–344, 345–348, 349–352, 353–356, 357–360, 361–364, 365–368, 369–372, Reteaching 376, Set F, 397–400, 401–404, 417–420, 421–424, 425–428, 429–432, Reteaching 435–436, Sets A–D, 481–484, 485–488, 489–492</p> <p>TE: 331–331A, 332–332C, 333A–336B, 341A–344B, 345A–348B, 349A–352B, 353A–356B, 357A–360B, 361A–364B, 365A–368B, 369A–372B, Reteaching 376, Set F, 397A–400B, 401A–404B, 417A–420B, 421A–424B, 425A–428B, 429A–432B, Reteaching 435–436, Sets A–D, 481A–484B, 485A–488B, 489A–492B</p>

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MGSE4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number e.g., by using a visual such as a number line or area model.	SE: 383–384, 385–388, 389–392, 393–396, 397–400, 401–404, Reteaching 407–408, Sets A-C, E, 481–484, 485–488, 489–492, 501–504, 505–508 TE: 383–384A, 385A–388B, 389A–392B, 393A–396B, 397A–400B, 401A–404B, Reteaching 407–408, Sets A-C, E, 481A–484B, 485A–488B, 489A–492B, 501A–504B, 505A–508B
a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.	SE: 383–384, 385–388, 389–392, 393–396, Reteaching 407, Sets A, B TE: 383–384A, 385A–388B, 389A–392B, 393A–396B, Reteaching 407, Sets A, B
b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)	SE: 389–392, 393–396, Reteaching 407, Sets B, C TE: 389A–392B, 393A–396B, Reteaching 407, Sets B, C
c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?	SE: 383–384, 389–392, 393–396, 397–400, 401–404, Reteaching 407–408, Sets C, E, 481–484, 485–488, 489–492, 501–504, 505–508 TE: 383–384A, 389A–392B, 393A–396B, 397A–400B, 401A–404B, Reteaching 407–408, Sets C, E, 481A–484B, 485A–488B, 489A–492B, 501A–504B, 505A–508B
Understand decimal notation for fractions, and compare decimal fractions.	
MGSE4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.	SE: 443–444, 457–460, Reteaching 472, Set D TE: 443–444A, 457A–460B, Reteaching 472, Set D

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MGSE4.NF.6 Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i>	SE: 443–444, 445–448, 449–452, Reteaching 471, Sets A, B TE: 443–444A, 445A–448B, 449A–452B, Reteaching 471, Sets A, B
MGSE4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.	SE: 443–444, 453–456, 465–468, Reteaching 471, Set C, 493–496 TE: 443–444A, 453A–456B, 465A–468B, Reteaching 471, Set C, 493A–496B
Measurement and Data 4.MD	
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	
MGSE4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.	SE: 397–400, 479, 480, 481–484, 485–488, 489–492, 493–496, 497–500, Reteaching 511, Sets A, B TE: 397A–400B, 479–479A, 480–480C, 481A–484B, 485A–488B, 489A–492B, 493A–496B, 497A–500B, Reteaching 511, Sets A, B
a. Understand the relationship between gallons, cups, quarts, and pints.	SE: 485–488, Reteaching 511, Sets A, B TE: 485A–488B, Reteaching 511, Sets A, B
b. Express larger units in terms of smaller units within the same measurement system.	SE: 479, 485–488, 497–500, Reteaching 511, Sets A, B TE: 479–479A, 485A–488B, 497A–500B, Reteaching 511, Sets A, B
c. Record measurement equivalents in a two column table.	SE: 481–484, 485–488, 493–496, 497–500 TE: 481A–484B, 485A–488B, 493A–496B, 497A–500B

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<p>MGSE4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<p>SE: 383–384, 397–400, 401–404, Reteaching 408, Set D, 449–452, 453–456, 461–464, 465–468, Reteaching 472, Set E, 480, 481–484, 485–488, 489–492, 493–496, 497–500, 501–504, 505–508, Reteaching 511, Set A</p> <p>TE: 383–384A, 397A–400B, 401A–404B, Reteaching 408, Set D, 449A–452B, 453A–456B, 461A–464B, 465A–468B, Reteaching 472, Set E, 480–480C, 481A–484B, 485A–488B, 489A–492B, 493A–496B, 497A–500B, 501A–504B, 505A–508B, Reteaching 511, Set A</p>
<p>MGSE4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</p>	<p>SE: 153–156, 168, 479, 501–504, 505–508, 512, Reteaching Sets C, D605–608</p> <p>TE: 153A–156B, 168–168C, 479–479A, 501A–504B, 505A–508B, 512, Reteaching Sets C, D605A–608B</p>
Represent and interpret data.	
<p>MGSE4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p>	<p>SE: 415, 416, 417–420, 421–424, 425–428, 429–432, Reteaching 435–436, Sets A–D</p> <p>TE: 415–415A, 416–416C, 417A–420B, 421A–424B, 425A–428B, 429A–432B, Reteaching 435–436, Sets A–D</p>
Geometric Measurement: understand concepts of angle and measure angles.	
<p>MGSE4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p>	<p>SE: 547, 549–552, 553–556, 557–560, 561–564, 569–572, Reteaching 575–576, Sets B, D, 589–592</p> <p>TE: 547–547A, 549A–552B, 553A–556B, 557A–560B, 561A–564B, 569A–572B, Reteaching 575–576, Sets B, D, 589A–592B</p>

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a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.	SE: 547, 549–552, 553–556, 557–560, 569–572, Reteaching 575, Set B, 589-592 TE: 547–547A, 549A–552B, 553A–556B, 557A–560B, 569A–572B, Reteaching 575, Set B, 589A–592B
b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	SE: 547, 557–560, 561–564, 569–572, Reteaching 576, Set D, 589–592 TE: 547–547A, 557A–560B, 561A–564B, 569A–572B, Reteaching 576, Set D, 589A–592B
MGSE4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	SE: 547, 548, 561–564, 569–572, Reteaching 576, Sets D, F TE: 547–547A, 548–548C, 561A–564B, 569A–572B, Reteaching 576, Sets D, F
MGSE4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol or letter for the unknown angle measure.	SE: 565–568, 569–572, Reteaching 576, Set E TE: 565A–568B, 569A–572B, Reteaching 576, Set E
MGSE4.MD.8 Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	SE: 93-96, 97-100, 145-148, 501-504, 505-508 TE: 93A-96B, 97A-100B, 145A-148B, 501A-504B, 505A-508B

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Geometry 4.G	
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	
MGSE4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	SE: 547, 548, 549–552, Reteaching 575, Set A, 583–584, 585–588, 589–592, 593–596, 605–608, Reteaching 611, Set A TE: 547–547A, 548–548C, 549A–552B, Reteaching 575, Set A, 583–584A, 585A–588B, 589A–592B, 593A–596B, 605A–608B, Reteaching 611, Set A
MGSE4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	SE: 583–584, 589–592, 593–596, 605–608, Reteaching 611–612, Sets B, C, F TE: 583–584A, 589A–592B, 593A–596B, 605A–608B, Reteaching 611–612, Sets B, C, F
MGSE4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	SE: 583–584, 597–600, 601–604, Reteaching 612, Sets D, E TE: 583–584A, 597A–600B, 601A–604B, Reteaching 612, Sets D, E

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Standards for Mathematical Practice	
<i>Students are expected to:</i>	
<p>1. Make sense of problems and persevere in solving them. Students solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, “What is the most efficient way to solve the problem?”, “Does this make sense?”, and “Can I solve the problem in a different way?”.</p>	<p>enVision Mathematics provides numerous instructional opportunities to help students develop proficiency in the math practices. To get students off to a good start on all eight practices, use the Math Practices and Problem Solving Handbook pages at SavvasRealize.com, along with the Math Practices Posters, and supporting Math Practices Animations. Each lesson begins with Problem-Based Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each Problem-Solving Lesson provides instruction and practice focused on a specific math practice.</p> <p>SE/TE: 25–28, 53–56, 61–64, 65–68, 89–92, 93–96, 97–100, 101–104, 109–112, 113–116, 137–140, 149–152, 153–156, 161–164, 185–188</p>
<p>2. Reason abstractly and quantitatively. Fifth graders should recognize that a number represents a specific quantity. They connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts.</p>	<p>enVision Mathematics provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. Reasoning problems throughout the exercise sets focus students’ attention on the structure or meaning of an operation, for example, rather than merely the solution.</p> <p>SE/TE: 13–16, 45–48, 49–52, 85–88, 105–108, 113–116, 133–136, 157–160, 197–200, 201–204, 205–208, 209–212, 229–232, 233–236, 237–240</p>

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<p>3. Construct viable arguments and critique the reasoning of others. In fifth grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain calculations based upon models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.</p>	<p>Consistent with a focus on reasoning and sense-making is a focus on critical reasoning— argumentation and critique of arguments. In enVision Mathematics, the Problem-Based Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. Many exercises found throughout the program specifically call for students to justify or explain their solutions. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student’s own processes and those of others.</p> <p>SE/TE: 9–12, 13–16, 21–24, 25–28, 45–48, 49–52, 53–56, 57–60, 65–68, 81–84, 85–88, 89–92, 93–96, 97–100, 109–112</p>
<p>4. Model with mathematics. Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve problems.</p>	<p>Students using enVision Mathematics are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation Plus often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.</p> <p>SE/TE: 5–8, 65–68, 89–92, 93–96, 101–104, 105–108, 109–112, 145–148, 161–164, 185–188, 193–196, 197–200, 241–244, 249–252, 277–280</p>

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<p>5. Use appropriate tools strategically. Fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real world data.</p>	<p>Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as Online Math Tools and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.</p> <p>SE/TE: 5-8, 61-64, 81-84, 149-152, 189-192, 197-200, 237-240, 273-276, 293-296, 301-304, 353-356, 397-400, 401-404, 457-460, 473-476</p>
<p>6. Attend to precision. Students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.</p>	<p>Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. The Problem-Based Learning activity provides repeated opportunities for students to use precise language to explain their solution paths while solving problems. In the Convince Me! feature, students revisit these key terms or concepts and provide explicit definitions or explanations.</p> <p>SE/TE: 17-20, 21-24, 29-32, 105-108, 113-116, 133-136, 145-148, 161-164, 181-184, 249-252, 305-308, 309-312, 341-344, 349-352, 361-364</p>
<p>7. Look for and make use of structure. In fifth grade, students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or a graphical representation.</p>	<p>Students are encouraged to look for structure as they develop solution plans. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.</p> <p>SE/TE: 5-8, 9-12, 13-16, 17-20, 25-28, 29-32, 61-64, 101-104, 129-132, 153-156, 181-184, 201-204, 229-232, 245-248, 297-300</p>

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<p>8. Look for and express regularity in repeated reasoning. Fifth graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.</p>	<p>Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and, as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Learning activities offer students opportunities to look for regularity in the way operations behave.</p> <p>SE/TE: 17–20, 29–32, 57–60, 133–136, 141–144, 145–148, 157–160, 281–284, 289–292, 301–304, 357–360, 413–416, 433–436, 489–492, 493–496</p>
Operations and Algebraic Thinking 5.OA	
Write and interpret numerical expressions.	
<p>MGSE5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>	<p>SE: 535, 537–540, 541–544, 549–552, Reteaching 555–556, Sets A, B, D</p> <p>TE: 535–535A, 537A–540B, 541A–544B, 549A–552B, Reteaching 555–556, Sets A, B, D</p>
<p>MGSE5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</p>	<p>SE: 535, 536, 541–544, 545–548, Reteaching 556, Sets C, D</p> <p>TE: 535–535A, 536–536C, 541A–544B, 545A–548B, Reteaching 556, Sets C, D</p>
Analyze patterns and relationships.	
<p>MGSE5.OA.3 Generate two numerical patterns using a given rule. Identify apparent relationships between corresponding terms by completing a function table or input/output table. Using the terms created, form and graph ordered pairs on a coordinate plane.</p>	<p>SE: 591, 592, 593–596, 597–600, 601–604, 605–608, Reteaching 611–612, Sets A–D</p> <p>TE: 591–591A, 592–592C, 593A–596B, 597A–600B, 601A–604B, 605A–608B, Reteaching 611–612, Sets A–D</p>

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Number and Operations in Base Ten 5.NBT	
Understand the place value system.	
MGSE5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	SE: 4, 9–12, 13–16, Reteaching 35, Sets B, C, 80, 81–84, Reteaching 119, Set A TE: 4–4C, 9A–12B, 13A–16B, Reteaching 35, Sets B, C, 80–80C, 81A–84B, Reteaching 119, Set A
MGSE5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	SE: 3, 5–8, Reteaching 35, Set A, 80, 81–84, Reteaching 119, Set A, 127–128, 129–132, Reteaching 167 Set A, 229–232, Reteaching 255, Set A, 267, 268, 501–504, 505–508, 509–512, Reteaching 527–528, Sets D–F TE: 3–3A, 5A–8B, Reteaching 35, Set A, 80–80C, 81A–84B, Reteaching 119, Set A, 127–128A, 129A–132B, Reteaching 167–168, Set A, 229A–232B, Reteaching 255–256, Set A, 267–267A, 268–268C, 501A–504B, 505A–508B, 509A–512B, Reteaching 527–528, Sets D–F
MGSE5.NBT.3 Read, write, and compare decimals to thousandths.	SE: 3, 4, 13–16, 17–20, 21–24, 29–32, Reteaching 35–36, Sets C, D, F TE: 3–3A, 4–4C, 13A–16B, 17A–20B, 21A–24B, 29A–32B, Reteaching 35–36, Sets C, D, F
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.	SE: 3, 4, 13–16, 17–20, 29–32, Reteaching 35–36, Sets C, F TE: 3–3A, 4–4C, 13A–16B, 17A–20B, 29A–32B, Reteaching 35–36, Sets C, F
b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	SE: 4, 21–24, 29–32, Reteaching 36, Sets D, F TE: 4–4C, 21A–24B, 29A–32B, Reteaching 36, Sets D, F
MGSE5.NBT.4 Use place value understanding to round decimals up to the hundredths place.	SE: 4, 25–28, Reteaching 36, Set E, 45–48, 49–52, Reteaching 71, Set B TE: 4–4C, 25A–28B, Reteaching 36, Set E, 45A–48B, 49A–52B, Reteaching 71, Set B

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Perform operations with multi-digit whole numbers and with decimals to hundredths.	
<p>MGSE5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm (or other strategies demonstrating understanding of multiplication) up to a 3 digit by 2 digit factor.</p>	<p>SE: 80, 85–88, 89–92, 93–96, 97–100, 101–104, 105–108, 109–112, 113–116, Reteaching 119–120, Sets B–G, 487–488, 489–492, 493–496, 497–500, 513–516, 517–520, 521–524, Reteaching 527–528, Sets A, B, C, G, H</p> <p>TE: 80–80C, 85A–88B, 89A–92B, 93A–96B, 97A–100B, 101A–104B, 105A–108B, 109A–112B, 113A–116B, Reteaching 119–120, Sets B–G, 487–488A, 489A–492B, 493A–496B, 497A–500B, 513A–516B, 517A–520B, 521A–524B, Reteaching 527–528, Sets A, B, C, G, H</p>
<p>MGSE5.NBT.6 Fluently divide up to 4-digit dividends and 2-digit divisors by using at least one of the following methods: 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 or concrete models. (e.g., rectangular arrays, area models)</p>	<p>SE: 179, 181–184, 185–188, 189–192, 193–196, 197–200, 201–204, 205–208, 209–212, Reteaching 215–218, Sets A–H, 487–488, 489–492, 493–496, 497–500, 513–516</p> <p>TE: 179–179A, 181A–184B, 185A–188B, 189A–192B, 193A–196B, 197A–200B, 201A–204B, 205A–208B, 209A–212B, Reteaching 215–218, Sets A–H, 487–488A, 489A–492B, 493A–496B, 497A–500B, 513A–516B</p>
<p>MGSE5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, 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.</p>	<p>SE: 43–44, 45–48, 49–52, 53–56, 57–60, 61–64, 65–68, Reteaching 71–72, Sets A–E, 79, 127–128, 129–132, 133–136, 137–140, 141–144, 145–148, 149–152, 153–156, 157–160, 161–164, Reteaching 167–170, Sets A–F, 229–232, 233–236, 237–240, 241–244, 245–248, 249–252, Reteaching 255–258, Sets A–F, 268</p> <p>TE: 43–44A, 45A–48B, 49A–52B, 53A–56B, 57A–60B, 61A–64B, 65A–68B, Reteaching 71–72, Sets A–E, 79–79A, 127–128A, 129A–132B, 133A–136B, 137A–140B, 141A–144B, 145A–148B, 149A–152B, 153A–156B, 157A–160B, 161A–164B, Reteaching 167–170, Sets A–F, 229A–232B, 233A–236B, 237A–240B, 241A–244B, 245A–248B, 249A–252B, Reteaching 255–258, Sets A–F, 268–268C</p>

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Number and Operations – Fractions 5.NF	
Use equivalent fractions as a strategy to add and subtract fractions.	
MGSE5.NF.1 Add and subtract fractions and mixed numbers with unlike denominators by finding a common denominator and equivalent fractions to produce like denominators.	SE: 268, 269–272, 273–276, 277–280, 281–284, 285–288, 289–292, 293–296, 297–300, 301–304, 305–308, 309–312, Reteaching 319–322, Sets A–G TE: 268–268C, 269A–272B, 273A–276B, 277A–280B, 281A–284B, 285A–288B, 289A–292B, 293A–296B, 297A–300B, 301A–304B, 305A–308B, 309A–312B, Reteaching 319–322, Sets A–G
MGSE5.NF.2 Solve word problems involving addition and subtraction of fractions, including cases of unlike denominators (e.g., by using visual fraction models or equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.	SE: 268, 269–272, 272–276, 277–280, 281–284, 285–288, 289–292, 293–296, 297–300, 301–304, 305–308, 309–312, 313–316, Reteaching 319–322, Sets A–H, 427–428, 429–432, 433–436, 437–440, 441–444, Reteaching 448, Sets C, D TE: 268–268C, 269A–272B, 272A–276B, 277A–280B, 281A–284B, 285A–288B, 289A–292B, 293A–296B, 297A–300B, 301A–304B, 305A–308B, 309A–312B, 313A–316B, Reteaching 319–322, Sets A–H, 427–428A, 429A–432B, 433A–436B, 437A–440B, 441A–444B, Reteaching 448, Sets C, D
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	
MGSE5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>Example: $3/5$ can be interpreted as “3 divided by 5 and as 3 shared by 5”.</i>	SE: 384, 385–388, 389–392, Reteaching 419, Set A TE: 384–384C, 385A–388B, 389A–392B, Reteaching 419, Set A
MGSE5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	
a. Apply and use understanding of multiplication to multiply a fraction or whole number by a fraction. <i>Examples: $a/b \times q$ as $a/b \times q/1$ and $a/b \times c/d = ac/bd$</i>	SE: 331–332, 333–336, 337–340, 341–344, 345–348, 349–352, Reteaching 371–372, Sets A–D TE: 331–332A, 333A–336B, 337A–340B, 341A–344B, 345A–348B, 349A–352B, Reteaching 371–372, Sets A–D

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b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths.	SE: 331–332, 353–356, Reteaching 372, Set E TE: 331–332A, 353A–356B, Reteaching 371–372, Set E
MGSE5.NF.5 Interpret multiplication as scaling (resizing), by:	
a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. <i>Example: 4×10 is twice as large as 2×10.</i>	SE: 331–332, 361–364, Reteaching 373–374, Set G TE: 331–332A, 361A–364B, Reteaching 373–374, Set G
b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	SE: 361–364, Reteaching 373–374, Set G TE: 361A–364B, Reteaching 373–374, Set G
MGSE5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	SE: 333–336, 337–340, 357–360, 365–368, Reteaching 371, 373–374, Sets A, B, F, H, 384, 437–440 TE: 333A–336B, 337A–340B, 357A–360B, 365A–368B, Reteaching 371–374, Sets A, B, F, H, 384–384C, 437A–440B
MGSE5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	SE: 384 TE: 384–384C
a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.	SE: 383, 401–404, 405–408, 413–416, Reteaching 419–420, Sets C, E TE: 383–383A, 401A–404B, 405A–408B, 413A–416B, Reteaching 419–420, Sets C, E

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b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.	SE: 383, 393–396, 397–400, 405–408, 409–412, Reteaching 419–420, Sets B–D TE: 383–383A, 393A–396B, 397A–400B, 405A–408B, 409A–412B, Reteaching 419–420, Sets B–D
c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual <i>fraction</i> models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?	SE: 383, 393–396, 397–400, 401–404, 405–408, 409–412, Reteaching 419–420, Sets B–D TE: 383–383A, 393A–396B, 397A–400B, 401A–404B, 405A–408B, 409A–412B, Reteaching 419–420, Sets B–D
Measurement and Data 5.MD	
Convert like measurement units within a given measurement system.	
MGSE5.MD.1 Convert among different-sized standard measurement units (mass, weight, length, time, etc.) within a given measurement system (customary and metric) (e.g., convert 5cm to 0.05m), and use these conversions in solving multi-step, real world problems.	SE: 487–488, 489–492, 493–496, 497–500, 501–504, 505–508, 509–512, 513–516, 517–520, 521–524, Reteaching 527–528, Sets A–H, 536 TE: 487–488A, 489A–492B, 493A–496B, 497A–500B, 501A–504B, 505A–508B, 509A–512B, 513A–516B, 517A–520B, 521A–524B, Reteaching 527–528, Sets A–H, 536–536C
Represent and interpret data.	
MGSE5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>	SE: 427–428, 429–432, 433–436, 437–440, 441–444, Reteaching 447–448, Sets A–C TE: 427–428A, 429A–432B, 433A–436B, 437A–440B, 441A–444B, Reteaching 447–448, Sets A–C

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Geometric Measurement: understand concepts of volume and relate volume to multiplication and division.	
MGSE5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	SE: 456 TE: 456–456C
a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.	SE: 455, 457–460, 473–476, Reteaching 479, Set A TE: 455–455A, 457A–460B, 473A–476B, Reteaching 479, Set A
b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	SE: 457–460, 473–476, Reteaching 479, Set A TE: 457A–460B, 473A–476B, Reteaching 479, Set A
MGSE5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	SE: 456, 457–460, 461–464, 473–476 TE: 456–456C, 457A–460B, 461A–464B, 473A–476B
MGSE5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	SE: 455, 456, 457-460, 461-464, 465-468, 469-472, 473-477, Reteaching 480, Sets C, D TE: 455-455A, 456-456C, 457A-460B, 461A-464B, 465A-468B, 469A-472B, 473A-477B, Reteaching 480, Sets C, D
a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	SE: 456, 461–464, Reteaching 479, Set B TE: 456–456C, 461A–464B, Reteaching 479, Set B
b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.	SE: 455, 461–464, Reteaching 479, Set B TE: 455–455A, 461A–464B, Reteaching 479, Set B

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c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	SE: 455, 465–468, 469–472, Reteaching 480, Sets C, D TE: 455–455A, 465A–468B, 469A–472B, Reteaching 480, Sets C, D
Geometry 5.G	
Graph points on the coordinate plane to solve real-world and mathematical problems.	
MGSE5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., <i>x</i> -axis and <i>x</i> -coordinate, <i>y</i> -axis and <i>y</i> -coordinate).	SE: 563–564, 565–568, 569–572, 577–580, Reteaching 583–584, Sets A, B, C TE: 563–564A, 565A–568B, 569A–572B, 577A–580B, Reteaching 583–584, Sets A, B, C
MGSE5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	SE: 563–564, 569–572, 573–576, 577–580, Reteaching 583–584, Sets B, C, 592, 601–604, Reteaching 612, Set C TE: 563–564A, 569A–572B, 573A–576B, 577A–580B, Reteaching 583–584, Sets B, C, 592–592C, 601A–604B, Reteaching 612, Set C
Classify two-dimensional figures into categories based on their properties.	
MGSE5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i>	SE: 619–620, 621–624, 625–628, 629–632, 633–636, Reteaching 639–640, Sets A–D TE: 619–620A, 621A–624B, 625A–628B, 629A–632B, 633A–636B, Reteaching 639–640, Sets A–D
MGSE5.G.4 Classify two-dimensional figures in a hierarchy based on properties (<i>polygons, triangles, and quadrilaterals</i>).	SE: 619–620, 621–624, 625–628, 629–632, 633–636, Reteaching 639–640, Sets B, C, D TE: 619–620A, 621A–624B, 625A–628B, 629A–632B, 633A–636B, Reteaching, 639–640, Sets B, C, D