A Correlation of

SCOTT FORESMAN ▪ ADDISON WESLEY

Mathematics

to the

District of Columbia Mathematics Standards

Grades PreK-6

PEARSON
Scott Foresman

O/M-164

Introduction

This document demonstrates the high degree of success students will achieve when using ***Scott Foresman – Addison Wesley Mathematics*** in meeting the objectives of the District of Columbia Mathematics Standards. Correlation page references are to the Teacher's Edition, which contains facsimile Student Edition pages.

Scott Foresman – Addison Wesley Mathematics was carefully developed to reflect the specific needs of students and teachers at every grade level, while maintaining an overall primary goal: to have math make sense from every perspective. This program is based on scientific research that describes how children learn mathematics well and on classroom-based evidence that validates proven reliability.

- **Reaching All Learners**

Scott Foresman – Addison Wesley Mathematics addresses the needs of every student through structured instruction that makes concepts easier for students to grasp. Lessons provide step-by-step examples that show students how to think about and solve the problem. Built-in leveled practice in every lesson allows the teacher to customize instruction to match students' abilities. Reaching All Learners, featured in the Teacher Edition, helps teachers meet the diverse needs of the classroom with fun and stimulating activities that are easy to incorporate directly into the lesson plan.

- **Test Prep**

Scott Foresman - Addison Wesley Mathematics builds understanding through connections to prior knowledge, math strands, other subjects and the real world. It provides practice for maximum results and offers assessment in a variety of ways. Besides carefully placed reviews at the end of each Section, an important Test Prep strand runs throughout the program. Writing exercises prepare students for open-ended and short-or extended-response questions on state and national tests. Spiral review in a test format help students keep their test-taking skills sharp.

- **Priority on problem solving:**

Problem-solving instruction is systematic and explicit. Reading connections help children with problem-solving skills and strategies for math. Reading for Math Success encourages students to use the reading skills and strategies they already know to solve math problems.

- **Instructional Support**

In the Teacher Edition, the Lesson Planner provides an easy, at-a-glance planning tool. It identifies objectives, math understandings, focus questions, vocabulary, and resources for each lesson in the chapter. Professional Development at the beginning of each chapter in the Teacher Edition includes a Skills Trace as well as Math Background and Teaching Tips for each section in the chapter.

Ancillaries help to reach all learners with practice, problem solving, hands-on math, language support, assessment and teacher support. Technology resources for both the student and the teacher provide a whole new dimension to math instruction by helping to create motivating and engaging lessons.

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Pre-Kindergarten

Strand 1: Number Sense and Operations

PK.N.1. Use one-to-one correspondence (e.g., sees four children at table and gives each child one cup. Touches each doll as she counts how many are in the cradle).
3, 18–21, 22–25, 34–37

PK.N.2. Count with understanding to at least 10 (e.g., counts 10 blocks, pointing to each as he counts and then says, "I have ten!" Chooses and counts 7 beads to put on necklace).
2–3, 4–5, 10–11, 12–13, 30–33, 34–37

PK.N.3. Use numbers to tell how many (number quantity) (e.g., says, "I broke my cookie into four pieces." Takes attendance and says, "There are ten boys and nine girls").
2–3, 4–5, 10–11, 12–13, 18–21, 22–25, 26–29, 30–33, 34–37

PK.N.4. Use numbers and counting as a means to solve problems, predict, and measure quantities (e.g., says, "Five cups" when asked to predict how many cups it will take to fill the bucket. Says, "Only four kids can ride tricycles now because that's all there are").
2–3, 4–5, 10–11, 12–13, 18–21, 22–25, 26–29, 30–33, 34–37, 46–49, 50–53, 54–57, 120–123, 124–127, 128–131, 140–143, 144–147, 148–151, 152–155, 156–159

PK.N.5. Recognize and name numerals up to 10 (e.g., points to each number on the toy clock while counting aloud. Points to sign and says, "See, only four kids can be at the water table").
34–37, 120–123

PK.N.6. Quickly recognize quantity of small groups of objects up to 4 (e.g., sees 3 bear counters and says, "There are three of them," without having to count them. While getting ready to paint at the easel, says, "Why are there only three paint colors today? We always have four!").
3, 4–5, 10–11, 12–13, 18–21, 22–25, 26–29, 30–33, 34–37

PK.N.7. Construct sets of a given number using concrete objects (e.g., counts six blocks to match the numeral 6. Plays a game of dominoes with a friend, lining up sides with the same number of dots to each other).
3, 4–5, 12–13

PK.N.8. Demonstrate the idea of adding and subtracting by using concrete objects (e.g., while playing "Bears in a Cave," says, "I see two bears, so one must be hiding." Arranges 3 teddy bear counters in a block construction and then gets 1 more, saying, "Now I have 4").
40–41, 42–43, 46–49, 50–53, 120–123, 124–127, 128–131

PK.N.9. Use ordinal numbers and positional words in everyday activities (e.g., looks at picture schedule and describes what comes first, second, and third. Arranges objects in order (seriate) from small to large).
2, 14–17, 30–33, 162, 165, 176–179

Strand 2: Patterns, Relations, and Algebra

PK.P.1. Sort and classify objects by more than one attribute – color, shape, size, number, etc. (e.g., sorts play dough cookies by size, color, or shape. Sorts a collection of buttons into those with 1- 4 holes).
162–163, 164–165, 168–171, 172–175, 176–179

PK.P.2. Recognize, describe, and copy simple patterns (e.g., joins the teacher in a clapping pattern, *slap the knees, slap the knees, clap hands; slap the knees, slap the knees, clap hands.* Uses a stamp to repeat a pattern).
92–93, 94–95, 98–101, 102–105, 106–109, 110–111

Strand 3: Geometry

PK.G.1. Describe, name, and interpret distance and position in space; understand and use positional words (e.g., turns Lotto game board so player sitting opposite can see it right side up. Frustrated, says, "I can't reach the ball; it's too high").
60, 86–89

PK.G.2. Recognize, name, and describe simple two- and three-dimensional shapes (e.g., says, "this is a triangle. See, it has three sides." Says, "You need balls of clay to make a snowman").
60–61, 62–63, 68–71, 72–77, 78–81, 82–85

PK.G.3. Match, sort, and classify shapes (e.g., says, "these all go together because they have three sides." When cleaning up blocks, orders the different shapes on the shelf by matching them to the outlines on the shelf).
60–61, 62–63, 72–73, 74–77

PK.G.4. Put together and take apart shapes to make new shapes (e.g., makes a picture using a variety of pattern block shapes. Puts a straw across a square and says, "Now I have triangles").
62, 68–72, 78–81

PK.G.5. Create shapes using concrete materials, such as straws (e.g., uses toothpicks to make rectangles of different sizes. Puts a ball on top of a triangular block and says, "I'm eating an ice cream cone").
62–63, 68–71

Strand 4: Measurement

PK.M.1. Identify appropriate tools of measurement (e.g., picks up a measuring cup and says, "We need to add two cups of water to the cake mix," in dramatic play. Experiments using a balance scale to see how many wooden cubes make one side go all the way down).
135, 136–137, 140–143, 144–147, 148–151, 152–155

PK.M.2. Make use of nonstandard and standard units for measurement to obtain information (e.g., uses footsteps to measure the length of the hopscotch grid on the playground. Looks at the clock and asks, "Is it time to go outside?").
135, 137, 140–143, 144–147, 148–151, 152–155

PK.M.3. Show awareness of time concepts and sequence (e.g., says, "After lunch we have read aloud time." Says, "We go home at 3 o'clock").
See Grade K.

Strand 5: Data Analysis, Statistics, and Probability

PK.D.1. Graph real objects or pictures of objects (no more than three) as a way to organize information (e.g., helps to make a graph (using actual shoes) showing how many children have sneakers with Velcro and how many have laces. Places cutouts of a hamster next to his favorite name for his new classroom pet).
134, 136–137, 156–159

PK.D.2. Describe and analyze information from graphs (e.g., says, "more kids like oranges than bananas," after looking at the tally marks next to the pictures of an orange and a banana. Says, "There are more boys than girls here today" after looking at the attendance graph).
134, 136–137, 156–159

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Kindergarten

Strand 1: Number Sense and Operations

Number Sense

K.N.1. Count by ones to at least 20.
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K.N.2. Represent, name, and order a set of objects (up to 20).
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K.N.3. Match quantities up to at least 10 with numerals and words.
51K–51L, 55–56, 59–60, 61–62, 63–64, 65–66, 75I, 75K, 81–82, 85–86

K.N.4. Compare sets of up to at least 10 concrete objects using appropriate language (e.g., none, more than, fewer than, same number of, one more than).
25I, 25K, 27A–27B, 27–28, 51J, 51K–51L, 63A–63B, 63–64, 65S–65B, 65–66, 75J, 75K, 87A–87B, 87–88, 89A–89B, 89–90, 91A–91B, 91–92

K.N.5. Identify positions of objects in sequences (e.g., first, second) up to fifth.
75L, 69A–69B, 69–70, 93A–93B, 93–94

K.N.6. Identify US coins by name and determine their value.
159K–159L, 179A–179B, 179–180, 181A–181B, 181–182, 183A–183B, 183–184, 185A–185B, 185–186, 187A–187B, 187–188, 189A–189B, 189–190

Fractions

K.N.7. Understand the concepts of whole and half.
215A–215B, 215–216

Computation and Operations

K.N.8. Use objects and drawings to model and solve related addition and subtraction problems to 10.
Related content: 223I–223J, 223K–223L, 225A–225B, 225–226, 227A–227B, 227–228, 229A–229B, 229–230, 231A–231B, 231–232, 233A–233B, 233–234, 235A–235B, 235–236, 237A–237B, 237–238, 239A–239B, 239–240, 243I–243J, 243K–243L, 245A–245B, 245–246, 247A–247B, 247–248, 249A–249B, 249–250, 251A–251B, 251–252, 253A–253B, 253–254, 255A–255B, 255–256, 257A–257B, 257–258, 259A–259B, 259–260, 263I–263J, 263K–263L, 265A–265B, 265–266, 267A–267B, 267–268, 269A–269B, 269–270, 271A–271B, 271–272, 273A–273B, 273–274, 275A–275B, 275–276, 277A–277B, 277–278, 279A–279B, 279–280, 281A–281B, 281–282

Estimation

K.N.9. Estimate the number of objects in a group and verify results.
101L, 119A–119B, 119–120, 291A–291B, 291–292

Strand 2: Patterns, Relations, and Algebra

K.P.1. Identify the attributes of objects as a foundation for sorting and classifying (e.g., a red truck, a red block, and a red ball share the attribute of being red; a square block, a square cracker, and a square book share the attribute of being square).
1I–1J, 1K–1L, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–18, 19A–19B, 19–20, 195K, 203A–203B, 203–204, 205A–205B, 205–206

K.P.2. Sort and classify objects by attribute such as color, shape, size, number, and other properties, and explain; identify objects that do not belong to a particular group (e.g., all these objects are red; those are green).
1I–1J, 1K–1L, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–18, 19A–19B, 19–20, 195K, 203A–203B, 203–204, 205A–205B, 205–206

K.P.3. Identify, reproduce, describe, extend, and create color, rhythmic, shape, number, and letter repeating patterns with simple attributes.
25J, 25L, 35A–35B, 35–36, 37A–37B, 37–38, 39A–39B, 39–40, 41A–41B, 41–42, 43A–43B, 43–44, 45A–45B, 45–46, 113A–113B, 113–114, 287A–287B, 287–288, 289, 293A–293B, 293–294, 295A–295B, 295–296, 297A–297B, 297–298

K.P.4. Count by fives and tens up to at least 50.
113A–113B, 113–114, 287A–287B, 287–288, 289A–289B, 289–290, 291A–291B, 291–292, 293A–293B, 293–294, 295A–295, 295–296

Strand 3: Geometry

K.G.1. Name shapes of pattern blocks (e.g., triangle, square, hexagon, rhombus, trapezoid)
These pages prepare students to meet this standard. 203A–203B, 203–204, 205A–205B, 205–206, 207A–207B, 207–208, 209A–209B, 209–210

K.G.2. Describe attributes of two-dimensional shapes (e.g., number of sides, number of corners, size, roundness); sort these shapes.
19A–19B, 19–20, 195K, 203A–203B, 203–204, 205A–205B, 205–206

K.G.3. Identify and compare three-dimensional shapes (e.g., cone, cube, cylinder, sphere).
195I, 195K–195L, 197A–197B, 197–198,199A–199B, 199–200, 201A–201B, 201–202

K.G.4. Identify positions of objects in space and use appropriate language (e.g., beside, inside, next to, close to, above, below, apart) to describe and compare their relative positions.
1K–1L, 3A–3B, 3–4, 5A–5B, 506, 7A–7B, 7–8, 9A–9B, 9–10

Strand 4: Measurement

K.M.1. Recognize and compare objects with respect to the attributes of length, volume/capacity, weight, area, and time using appropriate language (e.g., longer, taller, shorter, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).
133I–133J, 133K–133L, 133A–133B, 133–134, 135A–135B, 135–136, 137A–137B, 137–138, 145A–145B, 145–146, 149A–149B, 149–150, 153A–153B, 153–154, 155A–155B, 155–156

K.M.2. Make and use estimates of measurements from everyday experiences.
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K.M.3. Use standard and nonstandard units to measure length, area, weight, and capacity.
131K–131L, 139A–139B, 139–140, 141A–141B, 141–142, 147A–147B, 147–148, 151A–151B, 151–152

K.M.4. Order events in a day.
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K.M.5. Tell time to the nearest hour.
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K.M.6. Identify US coins and their value.
159K–159L, 179A–179B, 179–180, 181A–181B, 181–182, 183A–183B, 183–184, 185A–185B, 185–186, 187A–187B, 187–188, 189A–189B, 189–190

Strand 5: Data Analysis, Statistics, and Probability

K.D.1. Gather data about self and the environment to answer questions of interest to children; record the results using concrete graphs and simple picture graphs to display data.
25K, 31A–31B, 31–32, 33A–33B, 33–34

K.D.2. Describe relationships displayed in graphs, tables, or other representations (e.g., which has the most or least number of objects?).
25K, 29A–29B, 29–30, 31A–31B, 31–32, 33A–33B, 33–34

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Grade One

Strand 1: Number Sense and Operations

Number Sense

1.N.1. Count, read, and write whole numbers to 110 and relate them to the quantities they represent (e.g., knows that 60 is bigger than 20).
Many lessons meet this standard. These are a few of the many examples. R1–R8, 11A–11B, 11–12, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–18, 29A–29B, 29–30, 31A–31B, 31–32, 239I, 241A–241B, 241–242, 243A–243B, 243–244, 245A–245B, 245–246, 247A–247B, 247–248, 279I, 281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288, 295A–295B, 295–296, 297A–297B, 297–298, 301A–301B, 301–302, 303A–303B, 303–304

1.N.2. Compare and order whole numbers to 110 by using symbols for less than, equal to, or greater than (<, =, >).
1I, 29A–29B, 29–30, 31A–31B, 31–32, 295A–295B, 295–296, 297A–297B, 297–298, 301A–301B, 301–302

1.N.3. Identify the place value of the digits to 110.
239I, 241A–241B, 241–242, 279I, 281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288, 303A–303B, 303–304

1.N.4. Represent equivalent forms of the same number through the use of physical model, diagrams, and number expressions (e.g., 9 maybe represented as 4+5, 3+6, 3+3+3, 10-1, 12-3).
11A–11B, 11–12, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–18, 239I, 241A–241B, 241–242, 247A–247B, 247–248, 279I, 281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288, 303A–303B, 303–304

1.N.5. Use concrete objects (manipulatives) to model odd and even numbers and determine whether a set of objects has an odd or even number of elements.
265A–265B, 265–266

1.N.6. Make combinations of different coins up to 50 cents.
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Fractions

1.N.7. Model, identify, and represent fractions such as 1/2, 1/3, 1/4 as parts of wholes (e.g., one-fourth of a pie), parts of groups, and numbers on the number line.
183A–183B, 183–184, 185A–185B, 185–186, 187A–187B, 187–188, 189A–189B, 189–190

Computation and Operations

1.N.8. Demonstrate the ability to use conventional algorithms for addition and subtraction.
These pages prepare students to meet this standard. 11A–11B, 11–12, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–20, 21A–21B, 21–24, 25A–25B, 25–26, 27A–27B, 27–28, 35, 43I–43J, 45A–45B, 45–46, 47A–47B, 47–48, 49A–49B, 49–50, 51A–51B, 51–52, 53A–53B, 53–56, 57A–57B, 57–60, 61A–61B, 61–62, 63A–63B, 63–64, 65A–65B, 65–66, 67A–67B, 67–68, 69A–69B, 69–70, 71A–71B, 71–74, 89I–89J, 91A–91B, 91–92, 93A–93B, 93–94, 103A–103B, 103–104, 105A–105B, 105–106, 107A–107B, 107–110, 111A–111B, 111–112, 123I–123J, 127A–127B, 127–128, 129A–129B, 129–132, 133A–133B, 133–134, 137A–137B, 137–138, 139A–139B, 139–140, 141A–141B, 141–142, 415J, 417A–417B, 417–418, 419A–419B, 419–420, 421A–421B, 421–422, 423A–423B, 423–424, 435A, 435–436, 439B, 439–440, 441A–441B, 441–442, 443A–443B, 443–444, 459A–459B, 459–460, 461A–461B, 461–462, 463A–463B, 463–464, 465A–465B, 465–466, 471A–471B, 471–472, 473A–473B, 473–474, 475A–475B, 475–476, 477A–477B, 477–478, 487

1.N.9. Demonstrate an understanding of various meanings of addition and subtraction, such as addition as combination (i.e., plus, combined with, more); subtraction as comparison (i.e., how much less, how much more), equalizing (i.e., how many more are needed to make these equal), and separation (i.e., how much remaining).
11A–11B, 11–12, 13A–13B, 13–14, 15A–15B, 15–16, 17A–17B, 17–20, 21A–21B, 21–24, 25A–25B, 25–26, 27A–27B, 27–28, 35, 43I–43J, 45A–45B, 45–46, 47A–47B, 47–48, 49A–49B, 49–50, 51A–51B, 51–52, 53A–53B, 53–56, 57A–57B, 57–60, 61A–61B, 61–62, 63A–63B, 63–64, 65A–65B, 65–66, 67A–67B, 67–68, 69A–69B, 69–70, 71A–71B, 71–74, 89I–89J, 91A–91B, 91–92, 93A–93B, 93–94, 103A–103B, 103–104, 105A–105B, 105–106, 107A–107B, 107–110, 111A–111B, 111–112, 123I–123J, 127A–127B, 127–128, 129A–129B, 129–132, 133A–133B, 133–134, 137A–137B, 137–138, 139A–139B, 139–140, 141A–141B, 141–142, 415J, 417A–417B, 417–418, 419A–419B, 419–420, 421A–421B, 421–422, 423A–423B, 423–424, 435A, 435–436, 439B, 439–440, 441A–441B, 441–442, 443A–443B, 443–444

1.N.10. Know addition and subtraction facts (addends to ten), commit to memory, and use them to solve problems.

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1.N.11. Demonstrate the ability to add and subtract one- and two-digit numbers fluently without regrouping.

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1.N.12. Use mental arithmetic to find the sum or difference of two 1-digit numbers.

68, 108, 420

1.N.13. Find the sum of three 1-digit numbers (e.g., 3 + 4 + 2 =).

427A–427B, 427–428

1.N.14. Identify one more than, one less than, 10 more than, and 10 less than for any number up to 100.

25A–25B, 25–26, 27A–27B, 27–28, 105A–105B, 105–106, 295A–295B, 295–296, 419A–419B, 419–420, 421A–421B, 421–422

1.N.15. Understand and use the inverse relationship between addition and subtraction (e.g., 8 + 6 = 14 is equivalent to 14 – 6 = 8 and is also equivalent to 14 – 8 = 6) to solve problems and check solutions.
123J, 137A–137B, 137–138, 139A–139B, 139–140, 141A–141B, 141–142, 415J, 435A–435B, 435–436, 437A–437B, 437–438, 439A–439B, 439–440

Estimation

1.N.16. Recognize when an estimate is reasonable in problems that involve numbers that use the ones, tens, hundreds, and thousands places.
299A–299B, 299–300

Strand 2: Patterns, Relations, and Algebra

1.P.1. Identify, reproduce, describe, extend, and create simple rhythmic, shape, size, number, color, and letter repeating patterns.
1E, 1I, 3A–3B, 3–4, 5A–5B, 5–6, 7A–7B, 7–9, 33A–33B, 33–34, 37, 166, 239F, 255A–255B, 255–256, 257A–257B, 257–260, 261A–261B, 261–262, 271, 273–275

I.P.2. Describe and create addition and subtraction number patterns (e.g., 1, 4, 7, 10. . . or 25, 23, 21. . .).
239F, 255A–255B, 255–256, 257A–257B, 257–260, 261A–261B, 261–262, 271, 273–275

I.P.3. Identify different patterns on the hundreds chart.
255A–255B, 255–256

1.P.4. Skip count forward and backward by twos, fives, and tens up to at least 50, starting at any number and using appropriate aids (e.g., hundreds chart, number line).
255A–255B, 255–256, 257A–257B, 257–258, 273

1.P.5. Write and solve number sentences from problem situations that express relationships involving addition and subtraction, including +, -,<, >, =.
49A–49B, 49–50, 51A–51B, 51–52, 57A–57B, 57–58, 65A–65B, 65–66, 67A–67B, 67–68, 133A–133B, 133–134

1.P.6. Apply knowledge of fact families to solve simple open sentences for addition and subtraction that have variables (e.g., __ + 2 = 7 and 10 -__ =6).
83

Strand 3: Geometry

1.G.1. Describe attributes and parts of two- and three-dimensional shapes (e.g., length of sides and number of corners, edges, faces, and sides).
155L, 159A–159B, 159–160, 167A–167B, 167–168

1.G.2. Identify congruent shapes.
169A–169B, 169–170

1.G.3. Identify symmetry in two-dimensional shapes.
171A–171B, 171–172, 194

1.G.4. Combine shapes and take them apart to make other shapes (e.g., two congruent right triangles can be arranged to form a rectangle).
177A–177B, 177–178

1.G.5. Arrange and describe objects in space by proximity, position, and direction (e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of).
R10

Strand 4: Measurement

1.M.1. Compare the length, weight, and volume of two or more objects by using direct comparison.
Related content: 365A–365B, 365–366, 367A–367B, 367–368, 371A–371B, 371–372, 373A–373B, 373–374, 375A–375B, 375–376, 383A–383B, 383–384, 385A–385B, 385–386, 387A–387B, 387–388, 389A–389B, 389–390

1.M.2. Make and use estimates of measurement, including time and weight.
221–222, 365–366, 371–372, 373–374, 375–376, 381, 383–384, 385–386, 387–388, 389–390, 391–392, 393–394

1.M.3. Measure the length of objects by repeating a nonstandard or standard unit.
365A–365B, 365–366, , 367A–367B, 367–368, 369A–369B, 369–370, 371A–371B, 371–372, 373A–373B, 373–374, 375A–375B, 375–376

1.M.4. Tell time at half-hour intervals on analog and digital clocks using a.m. and p.m. and relate time to events (e.g., before/after, shorter/longer).
These pages prepare students to meet this standard. 205A–205B, 205–206, 207A–207B, 207–208, 209A–209B, 209–210, 211A–211B, 211–212, 219A–219, 219–220, 221A–221B, 221–222, 233

1.M.5. Make combinations of coins up to 50 cents.
329I–329J, 331A–331B, 331–332, 333A–333B, 333–334, 335A–335B, 335–336, 337A–337B, 337–338, 343A–343B, 343–344, 345A–345B, 345–346, 353A–353B, 353, 358

Strand 5: Data Analysis, Statistics, and Probability

1.D.1. Use surveys and observations to gather data about themselves and their surroundings (e.g., what is your favorite dessert?).
309A–309B, 309–310, 311A–311B, 311–312, 313A–313B, 313–314

1.D.2. Represent and compare data (e.g., largest, smallest, most often, least often) using tally charts, pictures, and bar graphs.
307A–307B, 307–308, 309A–309B, 309–310, 311A–311B, 311–312, 313A–313B, 313–314

1.D.3. Ask and answer simple questions related to data representations (e.g., who is the tallest student in the class? What is the favorite fruit of the class?).
309A–309B, 309–310, 311A–311B, 311–312, 313A–313B, 313–314

1.D.4. Decide which outcomes of experiments are certain or impossible.
363J, 401A–401B, 401–402

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Grade Two

Strand 1: Number Sense and Operations

Number Sense

2.N.1. Count, read, and write whole numbers to 1,000 and relate them to the quantities they represent.
81A–81B, 81–82, 83A–83B, 83–84, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396, 409A–409B, 409–410

2.N.2. Compare and order numbers to 1000; use the symbols >, <, =.
91A–91B, 91–92, 97A–97B, 97–98, 103A–103B, 103–104, 389J, 399A–399B, 399–400, 407A–407B, 407–408, 409A–409B, 409–410, 419

2.N.3. Identify the place value of the digits to 1000.
81A–81B, 81–82, 83A–83B, 83–84, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396

2.N.4. Use words, models, and expanded forms (e.g., 35 = 3 tens + 5 ones) to represent numbers to 1000.
81A–81B, 81–82, 83A–83B, 83–84, 85A–85B, 85–86, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396

2.N.5. Know that even numbers end in 0, 2, 4, 6,or 8; recognize even numbers as multiples of 2; know that odd numbers end in 1, 3, 5, 7 or 9 and work with patterns involving even and odd numbers.
101A–101B, 101–102

2.N.6. Identify the value of all US coins and $1, $5, $10 and $20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to $5.
79J, 109A–109B, 109–110, 111A–111B, 111–112, 113A–113B, 113–114, 115A–115B, 115–116, 117A–117B, 117–118, 119A–119B, 119–120, 121A–121B, 121–122, 123A–123B, 123–124, 127

Fractions

2.N.7. Know that fractions may represent a portion of a whole that has been partitioned into parts of equal area or length; use the terms numerator" and "denominator."
These pages can be used to introduce this standard. 269A–269B, 269–270, 271A–271B, 271–272, 273A–273B, 273–274

2.N.8. Recognize the inverse relationship between the size of a unit fraction and the size of the denominator (i.e., the larger the denominator, the smaller the size of the unit fraction).
These pages can be used to introduce this standard. 271A–271B, 271–272

2.N.9. Recognize, name, and write commonly used fractions such as 1/2, 2/3, 3/4.
271A–271B, 271–272, 273A–273B, 273–274, 277A–277B, 277–278, 283

2.N.10. Recognize that fractions such as 2/2, 3/3, 4/4, 10/10, 100/100 are equal to the whole and to one.
These pages can be used to introduce this standard. 269A–269B, 269–270

Computation and Operations

2.N.11. Demonstrate the ability to use conventional algorithms for addition (two 3-digit numbers and three 2-digit numbers) and subtraction (two 3-digit numbers).
Related content: 187A–187B, 187–188, 425I–425J, 427A–427B, 427–428, 431A–431B, 431–432, 433A–433B, 433–434, 435A–435B, 435–436, 447A–447B, 447–448, 449A–449B, 449–450, 451S–451B, 451–452

2.N.12. Find the distance between numbers on the number line (e.g., how far is 76 from 24).
This page prepares students to meet this standard. 229

2.N.13. Know addition and subtraction facts (addends to twelve), commit to memory, and use them to solve problems.
23A–23B, 23–24, 25A–25B, 25–26, 27A–27B, 27–28, 41I, 43A–43B, 43–44, 45AS–45B, 45–46, 47A–47B, 47–48, 51A–51B, 51–52, 53A–53B, 53–54, 61A–61B, 61–62, 63A–63B, 63–64, 65A–65B, 65–66, 67A–67B, 67–68

2.N.14. Demonstrate the ability to add and subtract 3-digit numbers accurately and efficiently.
425I–425J, 427A–427B, 427–428, 431A–431B, 431–432, 433A–433B, 433–434, 435A–435B, 435–436, 447A–447B, 447–448, 449A–449B, 449–450, 451S–451B, 451–452

2.N.15. Use mental arithmetic to find the sum or difference of two 2-digit numbers.
427A–427B, 427–428

2.N.16. Represent multiplication as repeated addition
469A–469B, 469–470

2.N.17. Demonstrate proficiency with multiplication facts for the 1' 2's and 5's.
These pages prepare students to meet this standard. 469A–469B, 469–470, 471A–471B, 471–472, 473A–473B, 473–474, 475A–475B, 475–476

2.N.18. Demonstrate an understanding of the inverse relationship of addition and subtraction and use that understanding to simplify computation and check solutions.
27A–27B, 27–28, 227A–227B, 227–228

Estimation

2.N.19. Estimate, calculate, and solve problems involving addition and subtraction of 2-digit numbers. Describe differences between estimates and actual calculations.
179A–179B, 179–180, 181A–181B, 181–182, 185A–185B, 185–186, 191A–191B, 191–192, 193A–193B, 193–194, 215A–215B, 215–216, 217A–217B, 217–218, 225A–225B, 225–226, 227A–227B, 227–228, 229A–229B, 229–230, 453A–453B, 453–454

Strand 2: Patterns, Relations, and Algebra

2.P.1. Distinguish between repeating and growing patterns; create and describe patterns such as repeating patterns and growing patterns using number, shape, size, color, and letter.
99A–99B, 99–100, 157A–157B, 157–158, 167, 413A–413B, 413–414, 420

2.P.2. Describe functions related to coin trades and measurement trades (e.g., five pennies make one nickel; four cups make one quart).
79J, 109B, 109, 111B, 117A–117B, 117–118, 121A–121B, 121, 305A–305B, 305–306, 355A–355B, 355–356

2.P.3. Skip count forward and backward by twos, fives, and tens up to at least 100, starting at any number.
99A–99B, 99–100, 467–468

2.P.4. Construct and solve open sentences that have variables (e.g., 42 +__ = 57).
29A–29B, 29–30, 443A–443B, 443–444, 474

2.P.5. Use the commutative and associative rules for addition to simplify mental calculations and to check results.
23A–23B, 23–24

Strand 3: Geometry

2.G.1. Identify, describe, draw, and compare two-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.
249A–249B, 249–250, 255A–255B, 255–256, 265B

2.G.2. Classify familiar two- and three-dimensional shapes by common attributes such as shape of curved and straight lines, number and shape of faces, edges, and vertices.
247A–247B, 247–248, 249A–249B, 249–250, 265A–265B, 265–266

2.G.3. Match and construct congruent (e.g., two triangles that are the same shape and size) and symmetric shapes (e.g., two halves of a heart divided down the center line).
257A–257B, 257–258, 261A–261B, 261–262

2.G.4. Identify shapes under rotation (turns), reflections (flips), translation (slides), and enlargement. Describe direction of translations (e.g., left, right, up, down).
259A–259B, 259–260

2.G.5. Predict and explain the results of putting two-dimensional shapes together and taking them apart (e.g., two congruent right triangular shapes form a rectangle).
255A–255B, 255–256

2.G.6. Relate geometric ideas to numbers (e.g., seeing rows in an array as a model of repeated addition).
471A–471B, 471–472

Strand 4: Measurement

2.M.1. Measure and compare the length of common objects using metric and US Customary units to the nearest centimeter or inch.
343A–343B, 343–344, 345A–345B, 345–346, 347A–347B, 347–348

2.M.2. Make and use estimates of measurement including time, volume, weight, and area.
297A–297B, 297–298, 341A–341B, 341–342, 343A–343B, 343–344, 345A–345B, 345–346, 347A–347B, 347–348, 353A–353B, 353–354, 363A–363B, 363–364

2.M.3. Select and correctly use the appropriate measurement tool (ruler, balance scale, thermometer).
343A–343B, 343–344, 345A–345B, 345–346, 347A–347B, 347–348, 351A–351B, 351–352, 383

2.M.4. Tell time at quarter-hour intervals.
291A–291B, 291–292, 293A–293B, 293–294, 295A–295B, 295–296

2.M.5. Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.
301A–301B, 301–302, 303A–303B, 303–304

2.M.6. Identify the value of all US coins and $1, $5, $10, and $20 bills. Find the value of a collection of coins and bills and different ways to represent an amount of money up to $5 using appropriate notation.
79J, 109A–109B, 109–110, 111A–111B, 111–112, 113A–113B, 113–114, 115A–115B, 115–116, 117A–117B, 117–118, 119A–119B, 119–120, 121A–121B, 121–122, 123A–123B, 123–124, 127

Strand 5: Data Analysis, Statistics, and Probability

2.D.1. Use interviews, surveys, and observations to gather data about themselves and their surroundings.
289J, 313A–313B, 313

2.D.2. Organize, classify, and represent data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.
289J, 311A–311B, 311–312, 313A–313B, 313–314, 315A–315B, 315–316, 319A–319B, 319–320, 321A–321B, 321–322, 323A–323B, 323–324, 327A–327B, 327–328, 333

2.D.3. Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.
289J, 311A–311B, 311–312, 313A–313B, 313–314, 315A–315B, 315–316, 319A–319B, 319–320, 321A–321B, 321–322, 323A–323B, 323–324, 327A–327B, 327–328

2.D.4. Decide which outcomes of experiments are certain, impossible, or most likely.
375A–375B, 375–376

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Grade Three

Strand 1: Number Sense and Operations

Number Sense

3.N.1. Exhibit an understanding of the base ten number system by reading, modeling, and writing whole numbers to at least 10,000; demonstrate an understanding of the values of the digits.
2I–2J, 6A–6B, 6–7, 8A–8B, 8–9, 10A–10B, 10–11, 12A–12B, 12–13, 18A–18B, 18–21, 22A–22B, 22–23

3.N.2. Represent, compare, and order numbers to 10,000 using various forms, including expanded notation (e.g., 3,206= 3 x 1,000 + 2 x 100 +6) and written out in words (e.g., three thousand two-hundred six).
2I–2J, 6A–6B, 6–7, 8A–8B, 8–9, 10A–10B, 10–11, 12A–12B, 12–13, 18A–18B, 18–21, 22A–22B, 22–23

3.N.3. Round whole numbers through 10,000 to the nearest 10, 100, and 1,000.
28A–28B, 28–31, 86B, 86–89, 98A–98B, 98–101

3.N.4. Recognize sets to which a number may belong (odd numbers, even numbers, and multiples of numbers through 10). Identify the numbers in those classes (e.g., the class of multiples of 7 between 1 and 29 consists of 7, 14, 21, 28).
These pages prepare students to meet this standard. 24, 258, 260, 276B, 276–277, 314, 324A–324B, 324–325, 368, 384, 402

Fractions and Decimals

3.N.5. Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of a collection.
498A–498B, 498–501, 502A–502B, 502–503, 512A–512B, 512–513, 516A–516B, 516–517, 518A–518B, 518–519, 522A–522B, 522–525

3.N.6. Recognize, name, and use equivalent fractions with denominators 2, 3, 4, and 8; place these fractions on the number line; compare and order them and relate the number line to a ruler, e.g., 1/2=2/4=4/8).
504A–504B, 504–505, 506A–506B, 506–509, 512A–512B, 512–513

3.N.7. Know the meaning of 0.75, 0.50, and 0.25 as they relate to money; know that fractions and decimals are two different representations of the same concept (e.g., 50 cents is 1/2 of a dollar, 75 cents is 3/4 of a dollar).
568B, 571

3.N.8. Know that any fraction can be written as a sum of unit fractions (e.g., 3/4=1/4+1/4+1/4).
520A–502B, 520–521

3.N.9. Model and represent a mixed number (with denominator 2, 3, or 4) as a whole number and a fraction (e.g., 1 2/3, 3 ½).
522A–522B, 522–525

Computation and Operations

3.N.10. Demonstrate an understanding of and the ability to use conventional algorithms for the addition and subtraction of up to 5-digit numbers.
Related content: 66A–66B, 66–69, 70A–70B, 70–71, 80A–80B, 80–81, 82A–82B, 82–85, 94A–94B, 94–95, 96A–96B, 96–97, 126A–126B, 126–127, 128A–128B, 128–131, 132A–132B, 132–135, 136A–136B, 136–139, 146A–146B, 146–147, 148A–148B, 148–149, 150A–150B, 150–151, 152A–152B, 152–155, 156A–156B, 156–157, 162A–162B, 162–165

3.N.11. Add and subtract up to 4-digit numbers accurately and efficiently.
66A–66B, 66–69, 70A–70B, 70–71, 80A–80B, 80–81, 82A–82B, 82–85, 94A–94B, 94–95, 96A–96B, 96–97, 126A–126B, 126–127, 128A–128B, 128–131, 132A–132B, 132–135, 136A–136B, 136–139, 146A–146B, 146–147, 148A–148B, 148–149, 150A–150B, 150–151, 152A–152B, 152–155, 156A–156B, 156–157, 162A–162B, 162–165

3.N.12. Use concrete objects and visual models to add and subtract common fractions (halves, thirds, fourths, sixths, and eighths) with like denominators.
520A–520B, 520–521

3.N.13. Solve problems involving addition and subtraction of money amounts in decimal notation.
162A–162B, 162–165

3.N.14. Know multiplication is the result of counting the total number of objects in a set of equal groups (e.g., 3 x 5 gives the number of objects in 3 groups of 5 objects).
260A–260B, 260–261, 262A–262B, 262–265

3.N.15. Know division (÷) as another way of expressing multiplication, i.e., that division "undoes" multiplication (e.g., 2 x 3 = 6 can be rewritten as 6 ÷ 2 = 3 or 6 ÷ 3 = 2).
384A–384B, 384–385

3.N.16. Know multiplication facts through 10 x 10 and related division facts (e.g., 9 x 8 = 72 and 72 ÷ 9 = 8). Use these facts to solve related problems (e.g., 3 x 5 is related to 3 x 50)
276A–276B, 276–279, 280A–280B, 280–281, 282A–282B, 282–283, 284A–284B, 284–285, 286A–286B, 286–287, 288A–288B, 288–291, 292A–292B, 292–293, 314I–314J, 316A–316B, 316–317, 318A–318B, 318–319, 320A–320B, 320–323, 324A–324B, 324–327, 328A–328B, 328–331, 384A–384B, 384–385, 612A–612B, 612–614

3.N.17. Solve simple problems involving multiplication of multidigit numbers by one-digit numbers (2,431 x 2).
612A–612B, 612–614, 626A–626B, 626–629, 630A–630B, 630–631, 632A–632B, 632–635, 636A–636B, 636–637

3.N.18. Solve division problems in which a multidigit number is evenly divided by a one-digit number (e.g., 125 ÷ 5).
370A–370B, 370–371, 372A–372B, 372–373, 374A–374B, 374–377, 386A–386B, 386–387, 388A–388B, 388–389, 390A–390B, 390–391, 392A–392B, 392–393, 396A–396B, 396–397, 398A–398B, 398–401, 402–A402B, 402–403, 648A–648B, 648–649, 650A–650B, 650–651, 652A–652B, 652–655

3.N.19. Multiply up to 2-digit numbers by a 1-digit number accurately and efficiently.
276A–276B, 276–279, 280A–280B, 280–281, 282A–282B, 282–283, 284A–284B, 284–285, 286A–286B, 286–287, 288A–288B, 288–291, 292A–292B, 292–293, 314I–314J, 316A–316B, 316–317, 318A–318B, 318–319, 320A–320B, 320–323, 324A–324B, 324–327, 328A–328B, 328–331, 384A–384B, 384–385, 612A–612B, 612–614, 626A–626B, 626–629, 630A–630B, 630–631, 632A–632B, 632–635

3.N.20. Use the commutative (order) and identity properties of addition and multiplication on whole numbers in computations and problem situations (e.g., 3 + 4 + 7 = 3 + 7 + 4 = 10 + 4).
66A–66B, 66–67, 263–264, 286A–286B, 286–287

3.N.21. Know and apply the special properties of 0 and 1 in multiplication.
286A–286B, 286–287

3.N.22. Use multiplication and division fact families to understand the inverse relationship of these two operations and to compare and check results (e.g., because 3 x 8 = 24, we know that 24 ÷ 8 = 3 or 24 ÷ 3 = 8).
384A–384B, 384–385

Estimation

3.N.23. Estimate the sum and difference of two numbers with three digits (sums up to 1000) and judge reasonableness of estimates.
86A–86B, 86–89, 98A–98B, 98–101

3.N.24. Understand and use the strategies of rounding and regrouping to estimate quantities, measures, and the results of whole-number computations (addition, subtraction, and multiplication) up to 2-digit whole numbers and amounts of money to $100, and to judge the reasonableness of answers.
86A–86B, 86–89, 98A–98B, 98–101, 510A–510B, 510–511, 533, 536, 539, 582–583, 584–587, 610J, 616A–616B, 616–617, 622A–622B, 622–623, 681–682, 684B, 685, 690–692, 695, 697

Strand 2: Patterns, Relations, and Algebra

3.P.1. Create, describe, extend, and explain symbolic (geometric) patterns and addition and subtraction patterns; describe patterns in a variety of ways.
24A–24B, 24–27, 72A–72B, 72–73, 270A–270B, 270–273, 330–331, 332A–332B, 332–335, 340A–340B, 340, 344A–344B, 344–345

3.P.2. Use boxes or other symbols to represent unknowns or quantities that vary in expressions and in equations or inequalities (=, < and >).
76A–76B, 76–77, 89, 281, 291, 293, 343, 404A–404B, 404–405, 614, 629, 655

3.P.3. Select appropriate operational and relational symbols to make an expression true (e.g., if 4_3=12, what operational symbol goes in the blank?).
76A–76B, 76–77, 346A–346B, 346–347

3.P.4. Determine values of variables in simple equations involving addition, subtraction, or multiplication (e.g., 4106 – . = 37, 5 = μ + 3, and – μ = 3).
76A–76B, 76–77, 89, 281, 291, 293, 343, 614, 629, 655

3.P.5. Know and express the relationships among linear units of measure, i.e., unit conversions (e.g., 3 feet=1 yard; 12 inches=1 foot).
536A–536B, 536–537, 538A–538B, 538–539, 584A, 586–587

3.P.6. Extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).
72A–72B, 72–73, 344A–344B, 344–345

Strand 3: Geometry

3.G.1. Compare and analyze attributes and other features (e.g., number and shape of sides, faces, corners, right angles) of two-dimensional geometric shapes, especially the attributes of triangles (isosceles, equilateral, right) and quadrilaterals (rectangle, square, parallelogram).
446A–446B, 446–448, 450A–450B, 450–452, 454A–454B, 454–455, 460A–460B, 460–461, 474A–474B, 474–475

3.G.2. Describe, model, draw, compare, and classify two-dimensional shapes such as circles and polygons, especially triangles and quadrilaterals.
432A–432B, 432–433, 446A–446B, 446–448, 450A–450B, 450–452, 454A–454B, 454–455, 474A–474B, 474–475

3.G.3. Identify angles as right, acute (less than a right angle), or obtuse (greater than a right angle).
444A–444B, 444–445

3.G.4. Identify and draw parallel, perpendicular, and intersecting lines.
442A–442B, 442–443

3.G.5. Identify and draw lines of symmetry in two-dimensional shapes.
460A–460B, 460–461

3.G.6. Apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.
456A–456B, 456–459

3.G.7. Using ordered pairs of whole numbers and/or letters, locate and identify points on a grid.
218A–218B, 218–221, 453

Strand 4: Measurement

3.M.1. Demonstrate an understanding of such attributes as length, area, and weight; select the appropriate type of unit for measuring each attribute using both the US Customary and metric systems.
468A–468B, 468–471, 532A–532B, 532–533, 534A–534B, 534–535, 536A–536B, 536–537, 538A–538B, 538–539, 582A–582B, 582–583, 584A–584B, 584–587, 678I, 680A–680B, 680–683, 684A–684B, 684–685, 690A–690B, 690–693, 694A–694B, 694–695

3.M.2. Carry out simple unit conversions within a system of measurement such as hours to minutes and cents to dollars (e.g., one hour = 60 minutes).
192B, 536A–536B, 536–537, 538A–538B, 538–539, 584A, 586–587, 680A–680B, 680–683, 684B, 684–685, 691–692, 694A–694B, 694–695

3.M.3. Identify time to the nearest five minutes on analog and digital clocks using a.m. and p.m. Compute elapsed time using a clock (e.g., hours and minutes since…) and using a calendar (e.g., days since…).
190I, 196A–196B, 196–197, 198A–198B, 198–199, 200A–200B, 200–201

3.M.4. Estimate and find area and perimeter of a rectangle and triangle using diagrams, models, and grids or by measuring.
426I, 464A–464B, 464–467, 468A–468B, 468–471

Strand 5: Data Analysis, Statistics, and Probability

3.D.1. Collect and organize data using observations, measurements, surveys, or experiments.
190J, 204A–204B, 204–207, 208A–208B, 208–210, 212A–212B, 212–214, 222A–222B, 222–223, 226A–226B, 226–227, 228A–228B, 228–231, 232A–232B, 232–233, 234A–234B, 234–235, 236A–236B, 236–237

3.D.2. Construct, identify the main idea, and make predictions from various representations of data sets in the forms of tables, bar graphs (horizontal and vertical forms), pictographs, and tallies.
190J, 204A–204B, 204–207, 208A–208B, 208–210, 212A–212B, 212–214, 216A–216B, 216–217, 222A–222B, 222–223, 226A–226B, 226–227, 228A–228B, 228–231, 232A–232B, 232–233, 234A–234B, 234–235, 236A–236B, 236–237

3.D.3. Record all possible outcomes for a simple event using concrete objects (e.g., tossing a coin).
These pages prepare students to meet this standard. 702A–702B, 702–703, 704A–704B, 704–707

3.D.4. Classify outcomes as certain, likely, unlikely, or impossible by conducting experiments using concrete objects such as counters, number cubes, spinners, or coins.
700A–700B, 700–701

3.D.5. List and count the number of possible combinations of objects from two sets (e.g., how many different outfits can one make from a set of two sweaters and a set of three skirts?).
See Grade 5.

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Grade Four

Strand 1: Number Sense and Operations

Number Sense

4.N.1. Exhibit an understanding of the base ten number system by reading, modeling, and writing whole numbers to at least 100,000, demonstrating an understanding of the values of the digits, and comparing and ordering the numbers.
2I, 4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11, 16A–16B, 16–19

4.N.2. Represent, compare, and order numbers to 100,000 using various forms, including expanded notation.
2I, 4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11, 16A–16B, 16–19

4.N.3. Round whole numbers to 100,000 to the nearest 10, 100, 1,000, 10,000, and 100,000.
20A–20B, 20–21, 68A–68B, 68–69, 254I, 258A–258B, 258–261, 316A–316B, 316–319

4.N.4. Recognize sets to which a number may belong (odds, evens, multiples and factors of given numbers, and squares) and use these in the solution of problems.
These pages can be used to introduce this standard. 124, 128, 402B, 402

4.N.5. Read and interpret whole numbers and decimals up to two decimal places; relate to money and place-value decomposition.
2I, 4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11, 16A–16B, 16–19, 28A–28B, 28–29, 628A–628B, 628–629

4.N.6. Determine if a whole number is a multiple of a given 1-digit whole number and if a 1-digit number is a factor of a given whole number.
These pages can be used to introduce this standard. 124A–124B, 124, 128A–128B, 128, 254J, 256B, 256–257, 312I, 314A–314B, 314–315

4.N.7. Find all factors of a whole number up to 50; know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 and itself and that such numbers are called prime numbers.
These pages can be used to introduce this standard. 124A–124B, 124–127

Fractions and Decimals

4.N.8. Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, as locations on a number line, and as locations on the number line.
498I, 500A–500B, 500–501, 502A–502B, 502–503, 504A–504B, 504–507, 508A–508B, 508–509

4.N.9. Know the relationships among halves, fourths, and eighths and among thirds, sixths, and twelfths; compare and order such fractions.
498I, 500A–500B, 500–501, 502A–502B, 502–503, 504A–504B, 504–507, 516A–516B, 516–519, 520A–520B, 520–521, 522A–522B, 522–523, 524A–524B, 524–527

4.N.10. Recognize, name, and generate equivalent forms of common decimals (0.5, 0.25, 0.2, 0.1) and fractions (halves, quarters, fifths, and tenths) and explain why they are equivalent.
624A–624B, 624–627

4.N.11. Select, use and explain models to relate common fractions and mixed numbers (e.g., 1/2, 1/3, 1/4, 1/5, 1/8, 1/10, 1/12, and 1 1/2); find equivalent fractions, mixed numbers, and decimals.
624A–624B, 624–627

4.N.12. Represent decimals between 0 and 1 up to the hundredths.
34A–34B, 34–36, 628A–628B, 628–629

Computation and Operations

4.N.13. Demonstrate an understanding of and the ability to use conventional algorithms for the addition and subtraction of multidigit numbers.
Related content: 76A–76B, 76–79, 80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89

4.N.14. Add and subtract up to 5-digit numbers accurately and efficiently.
76A–76B, 76–79, 80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89

4.N.15. Use concrete objects and visual models to add and subtract fractions where the denominators are equal or when one denominator a multiple of the other (denominators 2 through 12, and 100).
560I, 562A–562B, 562, 564A–564B, 564, 567, 568A–568B, 568, 574A–574B, 574, 578A–578B, 578

4.N.16. Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.
122J, 124A–124B, 124–127, 128A–128B, 128–131, 132A–132B, 132–135, 136A–136B, 136–137, 146A–146B, 146–147, 148A–148B, 148–149, 150A–150B, 150–151, 152A–152B, 152–153

4.N.17. Know multiplication facts through 12 x 12 and the inverse division facts. Use these facts to solve related multiplication problems and compute related problems.
122J, 148A–148B, 148–149, 150A–150B, 150–151, 256A–256B, 256–257, 312J, 314A–314B, 314–315

4.N.18. Demonstrate understanding of and ability to use the conventional algorithms for multiplication of up to three digits by two digits. Multiply 3-digit numbers by two digits accurately and efficiently.
76A–76B, 76–79, 80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89, 128A–128B, 128–131, 132A–132B, 132–135, 136A–136B, 136–139, 148A–148B, 148–149, 150A–150B, 150–151, 254J, 256A–256B, 256–257, 270A–270B, 270–273, 274A–274B, 274–277, 288A–288B, 288–289, 290A–290B, 290–291, 292A–292B, 292–293, 312I–312J, 314A–314B, 314–315, 332A–332B, 332–335, 336A–336B, 336–337, 340A–340B, 340–341

4.N.19. Demonstrate understanding of and the ability to use the conventional algorithm for division of up to three digits with a single digit divisor (with or without remainders). Divide up to a 3-digit number with a single-digit divisor accurately and efficiently. Interpret any remainders.
364J, 372A–372B, 372–373, 374A–374B, 374–375, 380A–380B, 380–383, 384A–384B, 384–385, 386A–386B, 386–389, 390A–390B, 390–391, 392A–392B, 392–395, 406A–406B, 406–407, 408A–408B, 408–411

4.N.20. Multiply fractions by whole numbers, using repeated addition and area rectangular models.
See Grade 6.

4.N.21. Mentally calculate simple products and quotients up to a 3-digit number by a 1-digit number (e.g., 400 x 7, or 320 ÷ 8).
262A–262B, 262–263, 366A–366B, 366–367

4.N.22. Multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.
286A–286B, 286–287, 340A–340B, 340–341, 392A–392B, 392–393

4.N.23. Determine the unit cost when given the total cost and number of units.
392B, 392–393

4.N.24. Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.
290A–290B, 290–291

4.N.25. Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations, e.g., 37 x 46 = 46 x 37, (5 x 7) x 2 = 5 x (7 x 2).
62B, 62, 129–131, 132, 134, 288A–288B, 288–289

4.N.26. Use the relationship between multiplication and division to simplify computations and check results.
122J, 148A–148B, 148–149

Estimation

4.N.27. Estimate and compute the sum or difference of whole numbers and positive decimals to two places.
68A–68B, 68–71, 636A–636B, 636–637

4.N.28. Estimate the answers to calculations involving addition, subtraction, or multiplication; know when approximation or a rounded solution is appropriate and use it to check the reasonableness of answers.
68A–68B, 68–71, 258A–258B, 258–261, 271, 316A–316B, 316–319, 636A–636B, 636–637

4.N.29. Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to 3-digit whole numbers and amounts of money to $1000, and to judge the reasonableness of answers.
60I, 62A–62B, 62–63, 64A–64B, 64–67, 68A–68B, 68–71, 254I, 258A–258B, 258–261, 316A–316B, 316–319, 364J, 368A–368B, 368–371, 600A–600B, 600–601, 636A–636B, 636–637

Strand 2: Patterns, Relations, and Algebra

4.P.1. Create, describe, extend, and explain geometric and numeric patterns, including multiplication patterns like 3, 30, 300, 3000; generalize the rule for the pattern and make predictions when given a table of number pairs of a set of data.
37, 90A–90B, 90–91, 122I, 128A–128B, 128–131, 136A–136B, 136–137, 140A–140B, 140–142, 256, 314, 406, 454, 641

4.P.2. Use symbol and letter variables (e.g., ., x) to represent unknowns or quantities that vary in expressions and in equations or inequalities (mathematical sentences that use =, < and >).
60J, 100A–100B, 100–101, 166A–166B, 166–167, 191, 195, 263, 288, 373, 383, 389, 396A–396B, 396–400, 688A–688B, 688–689, 690A–690B, 690–691

4.P.3. Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.
90A–90B, 90–91, 128A–128B, 128–131, 136A–136B, 136–137, 139, 140A–140B, 140–142, 686J, 692A–692B, 692–695

4.P.4. Solve problems involving proportional relationships, including unit pricing (e.g., four apples cost 80 cents, so one apple costs 20 cents) and map interpretation (e.g., one inch represents five miles, so two inches represent ten miles).
These pages provide opportunities for students to match data to models. 208A–208B, 208–211, 220–221, 222A–222B, 222–223

4.P.5. Determine how change in one variable relates to a change in a second variable (e.g., input-output tables).
136, 140A–140B, 140–141, 142, 256, 366A–366B, 366–367, 406A–406B, 406–407

Strand 3: Geometry

4.G.1. Compare and analyze attributes and other features (e.g., number of sides, faces, corners, right angles, diagonals, and symmetry) of two-and three-dimensional geometric shapes.
432I, 434A–434B, 434–437, 438A–438B, 438–439, 444A–444B, 444–447

4.G.2. Describe, model, draw, compare, and classify two- and three dimensional shapes (e.g., circles, polygons, cubes, spheres, pyramids, cones, cylinders).
432I, 434A–434B, 434–437, 438A–438B, 438–439, 444A–444B, 444–447, 448A–448B, 448–449

4.G.3. Know the definitions of a right angle, an acute angle, and an obtuse angle. Understand that 90°, 180°, 270°, and 360° are associated, respective with 1/4, 1/2, 3/4, and full turns.
440A, 441–443

4.G.4. Describe and draw intersecting, parallel, and perpendicular lines.
440A–440B, 441, 442

4.G.5. Recognize similar figures (two shapes, R and S, are similar if they are congruent after one of them is shrunk or expanded).
458A–458B, 458–459

4.G.6. Describe and apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.
452A–452B, 452–455

4.G.7. Predict and validate the results of partitioning, folding, and combining two- and three-dimensional shapes.
437, 446

4.G.8. Using ordered pairs of numbers and/or letters, graph, locate, and identify points and describe paths (first quadrant).
212A–212B, 212–215, 692A–692B, 692–695

Strand 4: Measurement

4.M.1. Identify and use appropriate metric and US Customary units and tools (e.g., ruler, protractor, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.
188I, 190A–190B, 190–191, 192A–192B, 192–195, 196A–196B, 196–197, 200A–200B, 200–201, 560J, 588A–588B, 588–589, 590A–590B, 590–591, 592A–592B, 592–593, 594A–594B, 594–595, 596A–596B, 596–599, 622J, 652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 664A–664B, 664–665

4.M.2. Carry out simple unit conversions within a system of measurement (e.g., yards to feet or inches; gallons to quarts and pints).
560J, 588A–588B, 588–589, 590A–590B, 590–591, 592A–592B, 592–593, 594A–594B, 594–595, 596A–596B, 596–599, 652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 658A–658B, 658–661, 664A–664B, 664–665

4.M.3. Identify time to the minute on analog and digital clocks using a.m. and p.m. Compute elapsed time using a clock (e.g., hours and minutes since…) and using a calendar (e.g., days since…).
190A–190B, 190–191, 196A–196B, 196–197

4.M.4. Estimate and find area and perimeter of shapes, including irregular shapes, using diagrams, models, and grids or by measuring.
432J, 464A–464B, 464–467, 468A–468B, 468–471

4.M.5. Recognize that rectangles that have the same area can have different perimeters; understand that rectangles that have the same perimeter can have different areas.
432J, 468A–468B, 468–471

Strand 5: Data Analysis, Statistics, and Probability

4.D.1. Collect and organize data using observations, measurements, surveys, or experiments and identify appropriate ways to display the data.
188J, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 222A–222B, 222–223, 230A–230B, 230–231

4.D.2. Match a representation of a data set such as lists, tables, or graphs (including circle graphs) with the actual set of data.
These pages prepare students to meet this standard. 188J, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 220–221, 222A–222B, 222–223, 226A–226B, 226–229, 230A–230B, 230–231

4.D.3. Construct, draw conclusions, and make predictions from various representations of data sets, including tables and bar graphs (where symbols or scales represent multiple units), line graphs, and line plots.
188J, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 220–221, 222A–222B, 222–223, 226A–226B, 226–229, 230A–230B, 230–231, 232–233, 405

4.D.4. Compare two data sets represented in two bar graphs, pie graphs, and histograms.
Related content: 208A–208B, 208–211

4.D.5. Represent the possible outcomes for a simple probability situation (e.g., the probability of drawing a red marble from a bag containing three red marbles and four green marbles).
686J, 704A–704B, 704–705, 706A–706B, 706–709, 710A–710B, 710–711

4.D.6. List and count the number of possible combinations of objects from three sets (e.g., how many different outfits can one make from set of three shirts, a set of two skirts, and a set of two hats?).
See Grade 5.

4.D.7. Use the results of probability experiments to predict future events (e.g., use a line plot to predict the temperature forecast for the next day).
710A–710B, 710–711

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Grade Five

Strand 1: Number Sense and Operations

Number Sense

5.N.1. Estimate, round, and manipulate very large (e.g., billions) and very small (e.g., thousandths) numbers; demonstrate an understanding of place value to billions and thousandths.
2E, 4A–4B, 4–5, 8A–8B, 8–9, 10, 14A–14B, 14–15, 16–17

5.N.2. Represent and compare very large (billions) and very small thousandths) positive numbers in various forms such as expanded notation without exponents (e.g., 9724 = 9 x 1000 + 7 x 100 + 2 x 10 + 4).
2E, 4A–4B, 4–5, 8A–8B, 8–9, 10, 14A–14B, 14–15, 16–17

5.N.3. Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line.
8A, 8, 404A–404B, 404–405, 430A, 430–431, 712A–712B, 712–714

5.N.4. Compare and order integers (including negative integers) and positive fractions, mixed numbers, decimals, and percents.
12A–12B, 12–13, 418A–418B, 418–419, 420A–420B, 420–423

5.N.5. Apply the number theory concepts of common factor, common multiple, and divisibility rules for 2, 3, 5, and 10 to the solution of problems. Demonstrate an understanding of the concepts of prime and composite numbers.
162A–162B, 162–163, 164A–164B, 164–167, 414A–414B, 414–415, 464A–464B, 464–465

5.N.6. Know the set of prime numbers to 100.
These pages prepare students to meet this standard. 164A–164B, 164–167

5.N.7. Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., 24=2x2x2x3=23x3).
These pages prepare students to meet this standard. 164A–164B, 164–167

Fractions, Decimals, and Percents

5.N.8. Explain different interpretations of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, as division of whole numbers by whole numbers, as locations on the number line.
394A–394B, 394–397, 404A–404B, 404–405

5.N.9. Interpret percents as parts out of 100, use % notation, and express a part of a whole as a percentage.
668A–668B, 668–669

5.N.10. Identify and determine common equivalent fractions, mixed numbers (with denominators 2, 4, 5, 10), decimals, and percents and explain why they represent the same value.
410A–410B, 410–411, 412A–412B, 412–413, 416A–416B, 416–417, 426A–426B, 426–429, 668A–668B, 668–669

5.N.11. Write improper fractions as mixed numbers, and know that a mixed number represents the number of "wholes" and the part of a whole remaining (e.g., 5/4 = 1+1/4=1 1/4).
400A–400B, 400–401

Computation and Operations

5.N.12. Add with negative integers, subtract positive integers from negative integers, and verify the reasonableness of the results.
716A–716B, 716–717, 718A–718B, 718–719

5.N.13. Add and subtract fractions (including mixed numbers) with and unlike denominators (of 2,3, 4, 10 only) and express answers in the simplest form.
460A–460B, 460–461, 462A–462B, 462–463, 466A–466B, 466–469, 472A–472B, 472–473, 474A–474B, 474–475, 476A–476B, 476–477, 478A–478B, 478–481

5.N.14. Add and subtract positive decimals.
2J, 38A–38B, 38–39, 40A–40B, 40–41

5.N.15. Solve problems involving multiplication and division of any whole number.
66A–66B, 66–67, 68A–68B, 68–69, 70A–70B, 70–71, 72A–72B, 72–75, 76A–76B, 76–78, 132A–132B, 132–135, 136A–136B, 136–137, 138A–138B, 138–141, 148A–148B, 148–151, 152A–152B, 152–155, 156A–156B, 156–157, 158A–158B, 158–159, 200I–200J, 202A–202B, 202–203, 204A–204B, 204–207, 214A–214B, 214–217, 218A–218B, 218–221, 222A–222B, 222–223, 224A–224B, 224–225

5.N.16. Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.
132A–132B, 132–135, 136A–136B, 136–137, 138A–138B, 138–141, 148A–148B, 148–151, 152A–152B, 152–155, 156A–156B, 156–157, 158A–158B, 158–159, 160A–160B, 160–161, 200I–200J, 202A–202B, 202–203, 204A–204B, 204–207, 214A–214B, 214–217, 218A–218B, 218–221, 222A–222B, 222–223, 224A–224B, 224–225, 230A–230B, 230–231, 232A–232B, 232–233, 234A–234B, 234–237

5.N.17. Use models to show an understanding of multiplication and division of fractions; multiply positive fractions with whole numbers. Simplify fractions in cases when both the numerator and the denominator have 2, 3, 4, 5, or 10 as a common factor.
See Grade 6.

5.N.18. Multiply positive decimals with whole numbers.
64J, 84A–84B, 84–85, 86A–86B, 86–87, 88A–88B, 88–91

5.N.19. Demonstrate an understanding of and compute (positive integer) powers of ten (e.g., 102, 105); compute examples as repeated multiplication.
Related content: 17

5.N.20. Demonstrate an understanding of how parentheses affect expressions involving addition, subtraction, and multiplication, and use that understanding to solve problems, e.g., 3 x (4 + 2) = 3 x 6.
172A–172B, 172–173

Estimation

5.N.21. Estimate sums and differences of whole numbers, positive fractions, and positive decimals. Estimate products of whole numbers and products of positive decimals with whole numbers. Use a variety of strategies and judge reasonableness of answers.
28A–28B, 28–31, 68A–68B, 68–69, 86A–86B, 86–87

Strand 2: Patterns, Relations, and Algebra

5.P.1. Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions (e.g., ABBCCC…; 1, 5, 9, 13, …; 3, 9, 27, …).
14A–14B, 14–17, 66, 75, 84, 106A–106B, 106–107, 136A–136B, 136–137, 141, 142–143, 144A–144B, 144–145, 202

5.P.2. Replace variables with given values, evaluate and simplify (e.g., 2(μ) + 3 when μ = 4).
100A–100B, 100–103, 104A–104B, 104–105, 108A–108B, 108–109, 137, 163, 700A–700B, 700–701

5.P.3. Use the properties of equality to solve problems with whole numbers (e.g., if x + 7 = 13, then x = 13 – 7, therefore x = 6; if 3 x __= 15, then 1/3 x 3 x__= 1/3 x 15, therefore__ = 5).
694I, 696A–696B, 696–699

5.P.4. Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols (e.g., input-output tables).
106A–106B, 106–107, 176A–176B, 176–179, 260A–260B, 260–261, 262A–262B, 262–265, 266A–266B, 266–269, 270A–270B, 270–273, 276A–276B, 276–279, 286A–286B, 286–287, 288A–288B, 288–291, 606A–606B, 606–607, 660A–660B, 660–661

5.P.5. Interpret and evaluate mathematical expressions that use parentheses; use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.
172A–172B, 172–173

5.P.6. Solve problems involving proportional relationships using concrete models, tables, graphs, and paper-pencil methods.
106A–106B, 106–107, 176A–176B, 176–179, 660A–660B, 660–661, 662A–662B, 662–663

5.P.7. Interpret graphs that represent the relationship between two variables in everyday situations.
262A–262B, 262–265, 274, 277–278, 288B, 291, 292B, 293

Strand 3: Geometry

5.G.1. Identify polygons based on their properties, including types of interior angles, perpendicular or parallel sides, and congruence of sides (e.g., squares, rectangles, rhombuses, parallelograms, trapezoids, and isosceles, equilateral, and right triangles).
326I, 340A–340B, 340–341, 342A–342B, 342–345, 346A–346B, 346–349

5.G.2. Identify, describe, and compare special types of three dimensional shapes (e.g., cubes, prisms, spheres, cones, and pyramids) based on their properties, such as edges and faces.
592I, 594A–594B, 594–596, 598A–598B, 598–601

5.G.3. Identify relationships among points, lines, and planes (e.g., intersecting, parallel, perpendicular).
328B, 328–331, 363

5.G.4. Identify and describe types of symmetry, including line and rotational.
364A–364B, 364–367, 368A–368B, 368–371

5.G.5. Determine if two triangles or two quadrilaterals are congruent by measuring sides or a combination of sides and angles.
360A–360B, 360–363, 364A–364B, 364–367

5.G.6. Predict, describe, and perform transformations on two dimensional shapes (e.g., translations, rotations, and reflections).
364A–364B, 364–367

5.G.7. Graph points and identify coordinates of points on the Cartesian coordinate plane in the first two quadrants.
174A–174B, 174–175, 724A–724B, 724–727

Strand 4: Measurement

5.M.1. Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles. Apply formulas where appropriate.
526I–526J, 540A–540B, 540–541, 548A–548B, 548–549, 550A–550B, 550–551, 552A–552B, 552–553, 554A–554B, 554–555, 558A–558B, 558–559

5.M.2. Apply formulas for the areas of triangles, rectangles, and parallelograms; recognize that shapes with the same number of sides but different appearances can have the same area.
526I–526J, 548A–548B, 548–549, 550A–550B, 550–551, 552A–552B, 552–553, 554A–554B, 554–555

5.M.3. Solve problems involving proportional relationships and units of measurement.
526, 528B, 528–531, 536A–536B, 536–538, 562A–562B, 562–563, 614A–614B, 614–615, 616A–616B, 616–617, 620A–620B, 620–621, 622A–622B, 622–623, 644I, 646A–646B, 646–647, 648A–648B, 648–651, 652A–652B, 652–653, 662A–662B, 662–665

5.M.4. Identify, measure, and describe circles and the relationships of the radius, diameter, circumference, and area (e.g., d=2r) and use these concepts to solve problems.
336A–336B, 336–337, 542A–542B, 542–545, 559

5.M.5. Find volumes and surface areas of rectangular prisms.
592J, 602A–602B, 602–603, 610A–610B, 610–613

5.M.6. Know that angles on a straight line add up to 180°, interior angles of a triangle add up to 180°, angles surrounding a point add up to 360°, and interior angles of a quadrilateral add up to 360°; use these properties to solve problems.
332A–332B, 332–335, 352A–352B, 352–355

5.M.7. Identify, measure, describe, classify, and draw various angles and triangles, given sides and the angle between them or given two angles and the side between them (e.g., draw a triangle with one right angle and two sides congruent).
326J, 332A–332B, 332–335, 342A–342B, 342–345, 371

Strand 5: Data Analysis, Statistics, and Probability

5.D.1. Define and apply the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ.
258I, 282A–282B, 282–285

5.D.2. Construct, label, and interpret stem-and-leaf plots, line plots, bar graphs, and circle graphs.
262A–262B, 262–265, 266A–266B, 266–269, 270A–270B, 270–273, 274–275, 276A–276B, 276–279, 286A–286B, 286–287, 288A–288B, 288–291, 292A–292B, 292–293

5.D.3. Predict the probability of outcomes of simple experiments (e.g., tossing a coin, rolling a die) and test the predictions.
258J, 296A–296B, 296–298, 299–300A–300B, 300–301, 302A–302B, 302–305

Scott Foresman – Addison Wesley Mathematics
to the
District of Columbia Mathematics Standards

Grade Six

Strand 1: Number Sense and Operations

Number Sense

6.N.1. Explain the properties of and compute with rational numbers, expressed in a variety of forms.
74I–74J, 86A–86B, 86–89, 90A–90B, 90–93, 94A–94B, 94–97, 100A–100B, 100–103, 202I–202J, 204A–204B, 204–205, 206A–206B, 206–209, 218A–218B, 218–219, 220A–220B, 220–223, 224A–224B, 224–225, 248A–248B, 248–251, 252A–252B, 252–255, 258A–258B, 258–259, 266A–266B, 266–269, 270A–270B, 270–271, 406J, 418A–418B, 418–421, 422A–422B, 422–425, 426A–426B, 426–427, 428A–428B, 428–429

6.N.2. Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.
78A–78B, 78, 160B, 162, 169, 172B, 176, 179

6.N.3. Know that numbers and their negatives add to 0 and are on opposite sides and at equal distance from 0 on a number line; know that 0 is an integer that is neither negative nor positive.
408A–408B, 408–409

6.N.4. Represent rational numbers as fractions or terminating decimals when possible and translate between these representations.
140J, 160A–160B, 160–163, 165A–165B, 165–167, 168A–168B, 168–169, 172A–172B, 172–175, 412A–412B, 412–413

6.N.5. Identify and determine common equivalent fractions, mixed numbers, decimals, and percents.
Related content: 164A–164B, 164–167, 172A–172B, 172–175, 355A–355B, 355–357, 358A–358B, 358–361

6.N.6. Apply number theory concepts–including prime and composite numbers, prime factorization, greatest common factor, least common multiple, and divisibility rules for 2, 3, 4, 5, 6, 9, and 10–to the solution of problems.
142A–142B, 142–145, 146A–146B, 146–149, 15A0–150B, 150–151, 152A–152B, 152–153

6.N.7. Round whole numbers and decimals to any given place.
14A–14B, 14–15, 80A–80B, 80–81

Computation and Operations

6.N.8. Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers and with positive fractions, mixed numbers, decimals, and percents.
414A–414B, 414–415

6.N.9. Know integer subtraction is the inverse of integer addition; use the number line to model addition and subtraction of integers and add and subtract integers, with the exception of subtracting negative integers.
406J, 418A–418B, 418–421, 422A–422B, 422–425

6.N.10. Accurately and efficiently add, subtract, multiply, and divide (with multidigit divisors) whole numbers and positive decimals.
74I–74J, 86A–86B, 86–89, 90A–90B, 90–93, 94A–94B, 94–97, 100A–100B, 100–103

6.N.11. Use prime factorization to add and subtract fractions with like and unlike denominators.
202I, 204A–204B, 204–205, 206A–206B, 206–209

6.N.12. Accurately and efficiently add, subtract, multiply, and divide positive fractions (including mixed numbers) with like and unlike denominators. Simplify fractions.
202I, 202J, 204A–204B, 204–205, 206A–206B, 206–209, 218A–218B, 218–219, 220A–220B, 220–223, 246I, 248A–248B, 248–251, 252A–252B, 252–255, 258A–258B, 258–259, 266A–266B, 266–269, 270A–270B, 270–271

6.N.13. Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.
366A–366B, 366–367, 370A–370B, 370–371, 380A–380B, 380–383, 384A–384B, 384–385, 386A–386B, 386–387

6.N.14. Apply laws of exponents to multiply whole number powers with like bases.
These pages prepare students to meet this standard. 106A–106B, 106–109

6.N.15. Apply the Order of Operations for expressions involving addition, subtraction, multiplication, and division with grouping symbols (+, –, x, ÷).
24A–24B, 24–27

Estimation

6.N.16. Estimate results of computations with whole numbers and with positive fractions, mixed numbers, decimals, and percents. Describe reasonableness of estimates.
16A–16B, 16–17, 18A–18B, 18–19, 216A–216B, 216–217, 256A–256B, 256–257, 368A–368B, 368–369

Strand 2: Patterns, Relations, and Algebra

6.P.1. Use the properties of equality to solve problems using letter name variables (e.g., 1/4 + x = 7/12).
2J, 44A–44B, 44–47

6.P.2. Solve linear equations using concrete models, tables, graphs, and paper-pencil methods.
448A–448B, 448–449

6.P.3. Identify and describe relationships between two variables with a constant rate of change (e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches). Contrast these with relationships where the rate of change is not constant.
Related content: 298J, 316A–316B, 316–317, 318A–318B, 318–321, 322A–322B, 322–323, 324A–324B, 324–325, 328A–328B, 328–329, 330A–330B, 330–333, 444A–444B, 444–447, 448A–448B, 448–449, 542A–542B, 542–545, 546A–546B, 546–549, 551, 696J, 718A–718B, 718–721

6.P.4. Simplify expressions of the first degree by combining like terms, and evaluate using specific values.
These pages prepare students to meet this standard. 40A–40B, 40–43

6.P.5. Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same truth values.
2J, 44A–44B, 44–47

6.P.6. Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same truth values.
2J, 44A–44B, 44–47

6.P.7. Distinguish between an algebraic expression and an equation.
These pages can be used to introduce this standard. 40A–40B, 40–43, 48A–48B, 48–51

6.P.8. Recognize when information given in a table, graph, or formula suggests a proportional or linear relationship.
444A–444B, 444–447, 448A–448B, 448–449

6.P.9. Produce and interpret graphs that represent the relationship between two variables (x and y) in everyday situations.
636A–636B, 636–637, 638A–638B, 638–641, 646A–646B, 646–647

Strand 3: Geometry

6.G.1. Match three-dimensional objects and their two-dimensional representations (e.g., nets, projections, and perspective drawings).
586A–586B, 587–588

6.G.2. Identify angles as vertical, adjacent, complementary, or supplementary; provide descriptions of these terms; and use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle.
480A–480B, 480–483

6.G.3. Determine if two shapes are congruent by motions or series of motions (e.g., translations, rotations, and reflections); predict the results of transformations on unmarked planes and draw the transformed figure (e.g., predict how tessellations transform under translation, reflection, and rotation).
506A–506B, 506–508, 510A–510B, 510–511, 512

6.G.4. Graph points and identify coordinates of points on the Cartesian coordinate plane in all four quadrants.
440A–440B, 440–442

6.G.5. Find the distance between two points on horizontal or vertical number lines.
Related content: 440A–440B, 440–442

Strand 4: Measurement

6.M.1. Differentiate between and use appropriate units of measures for two- and three-dimensional objects (i.e., when finding perimeter, area, and volume).
540J, 564A–564B, 564–567, 568A–568B, 568–569, 570A=570B, 570–571, 572A–572B, 572–575, 580A–580B, 580–581, 594A–594B, 594–597

6.M.2. Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides but different appearances can have the same area.
572A–572B, 572–575

6.M.3. Develop strategies to find the area and perimeter of complex shapes (e.g., subdividing them into basic shapes such as quadrilaterals, triangles, circles).
572A–572B, 572–575

6.M.4. Solve problems involving proportional relationships and units of measurement (e.g., same system unit conversions, scale models, maps, and speed).
298J, 316A–316B, 316–317, 318A–318B, 318–321, 322A–322B, 322–323, 324A–324B, 324–325, 328A–328B, 328–329, 330A–330B, 330–333, 542A–542B, 542–545, 546A–546B, 546–549, 551

6.M.5. Understand the concept of volume; use the appropriate units in common measuring systems (e.g., cubic inch, cubic centimeter, cubic meter, cubic yard) to compute the volume of rectangular solids, including rectangular prisms.
594A–594B, 594–597

6.M.6. Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals; measure the interior angles of various polygons.
89, 476A–476B, 476–479, 484A–484B, 484–487, 496A–496B, 496–499, 500A–500B, 500–501

6.M.7. Understand the concept of a constant such as ð; know the formulas for the circumference and area of a circle. Use the concepts to solve problems.
540J, 576A–576B, 576–579, 580A–580B, 580–581

6.M.8. Know and use the formulas for the volumes and surface areas of cubes and rectangular prisms, given the lengths of their sides.
590A–590B, 590–593, 594A–594B, 594–597

6.M.9. Find the sum of the angles in simple polygons (up to eight sides) with and without measuring the angles.
496A–496B, 496–498, 500A–500B, 500–501

Strand 5: Data Analysis, Statistics, and Probability

6.D.1. Describe and compare data sets using the concepts of median, mean, mode, maximum and minimum, and range.
624A–624B, 624–627

6.D.2. Construct circle graphs using ratios, proportions, and percents.
642A–642B, 642–645, 648A–648B, 648–649

6.D.3. Use tree diagrams and other models (e.g., lists and tables) to represent possible or actual outcomes of trials.
618J, 654A–654B, 654–657

6.D.4. Represent two numerical variables on a scatterplot and describe any apparent relationship that exists between the two variables (e.g., between time spent on homework and grades in class).
640

6.D.5. Compute probabilities of events from simple experiments with equally likely outcomes (e.g., tossing dice, flipping coins, spinning spinners) by listing all possibilities and finding the fraction that meets given conditions. Analyze the outcomes.
618J, 654A–654B, 654–657

6.D.6. Use appropriate ratios between 0 and 1 to represent the probability of the outcome and associate the probability with the likelihood of the event; know that 0 probability means an event will not occur and that probability 1 means an event will occur.
662A–662B, 662–663, 664A–664B, 664–667