A Correlation of

SCOTT FORESMAN ▪ ADDISON WESLEY

Mathematics

to the

Utah
Core Curriculum
for Mathematics
Grades K-5

PEARSON

Scott
Foresman

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 Utah Core Curriculum for Mathematics. Correlation page references are to the Teacher Edition. Lessons in the Teacher's Edition contain 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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Scott Foresman – Addison Wesley Mathematics
to the
Utah Core Curriculum Standards for Mathematics

Kindergarten

Standard I
Students will understand simple number concepts and relationships.

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a.   Relate a *numeral* to the number of objects in a set (e.g., ☐ ☐ ☐ = 3).
55A–55B, 55–56, 59A–59B, 59–60, 61A–61B, 61–62, 63A, 63–64, 65A–65B, 65–66, 75L, 81A–81B, 81– 82, 83A–83B, 83–84, 85–86, 87A–87B, 87–88, 101K

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a.   Demonstrate the joining and separating of sets with objects to solve problems.
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Students will identify and use patterns to represent mathematical situations.

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25J, 25L, 35A–35B, 37B, 39B, 41B, 43B

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Standard III
Students will identify and create simple geometric shapes and describe spatial relationships.

Objective 1
Identify and create simple geometric shapes.

a.   Identify circles, triangles, rectangles, and squares.
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c.   Draw circles, triangles, rectangles, and squares.
195L, 203A–203B, 203–204, 205A–205B, 205–206

d.   Recognize circles, triangles, rectangles, and squares in the students' environment.
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195L, 201A–201B, 201–202, 203A–203B, 203–204, 205A–205B, 205–206

Objective 2
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a.   Visualize how to fit a shape into a design.
209A–209B, 209–210

b.   Use and demonstrate words to describe position with objects (i.e., on, over, under, above, below, top, bottom, up, down, in front of, behind, next to, beside).
1K–1L, 3A–3B, 3–4, 5A–5B, 5–6, 7A–7B, 7–8, 9A–9B, 9–10

c.   Use and demonstrate words to describe distance with objects (i.e., far, near).
Related content:
1K–1L, 3A–3B, 3–4, 5A–5B, 5–6, 7A–7B, 7–8, 9A–9B, 9–10

Standard IV
Students will understand and use simple measurement tools and techniques.

Objective 1
Identify measurable attributes of objects and units of measurement.

a.   Identify clocks and calendars as tools that measure time.
159J, 159K, 167A–167B, 167–168, 173A–173B, 173–174, 175A–175B, 175–176

b.   Identify a day, week, and month on a calendar.
159I, 161A–161B, 161–162, 163A–163B, 163–164, 165A–165B, 165–166, 167A–167B, 167–168

c.   Identify pennies, nickels, dimes, and quarters as units of money.
159K–159L, 179A–179B, 179–180, 181A–181B, 181–182, 183A–183B, 183–184, 187A–187B, 187–188

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a.   Compare two objects (e.g., shorter/longer, heavier/lighter, larger/smaller, more/less).
131I–131J, 131K–131L, 133A–133B, 133–134, 135A–135B, 135–136, 145A–145B, 145–146, 149A–149B, 149–150

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159K–159L, 179A–179B, 179–180, 181A–181B, 181–182, 183A–183B, 183–184, 187A–187B, 187–188

Standard V
Students will collect and draw conclusions from data and understand basic concepts of probability.

Objective 1
Collect, organize, and display simple data.

a.   Collect, organize, and record data using objects and pictures.
25K, 29A–29B, 29–30, 31A–31B, 31–32, 33A–33B, 33–34

b.   Represent data in a variety of ways (e.g., graphs made from people, *pictographs*, bar graphs) and interpret the data (e.g., more people like red than blue).
25K, 29A–29B, 29–30, 31A–31B, 31–32, 33A–33B, 33–34

Objective 2
Determine the likelihood of events.

a.   Describe events encountered in books read as possible or not possible.
Related content:
125A–125B, 125–126

b.   Describe events as likely or unlikely (e.g., It is likely to snow today. It is unlikely an elephant will be in school).
Related content:
125A–125B, 125–126

Scott Foresman – Addison Wesley Mathematics
to the
Utah Core Curriculum Standards for Mathematics

Grade One

Standard I
Students will acquire number sense and perform simple operations with whole numbers.

Objective 1
Represent whole numbers in a variety of ways.

a. Relate number words to the *numerals* that represent the quantities 0 to 10.
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b. Sort objects into groups of tens and ones and write the numeral representing the set.
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281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288, 289–290

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281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288

e. Write a numeral to 99 in *expanded form* (e.g., 39 is 3 tens and 9 ones or 30+9).
285A–285B, 285–286

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R4, 281A–281B, 281–282, 283A–283B, 283–284, 285A–285B, 285–286, 287A–287B, 287–288, 289A–289B

Objective 2
Identify simple relationships among whole numbers.

a.   Identify the number that is one more or one less than any whole number from 1 to 99.
17B, 17–18, 19A–19B, 19–20, 25A–25B, 25–26, 263A–263B, 263–264, 295A–295B, 295–296

b.   Use the vocabulary "greater than," "less than," and "equal to" when comparing sets of objects or numbers.
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c.   Order sets of objects and numbers from 0 to 20.
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d.   Use ordinal numbers 1st through 5th (i.e., 1st, 2nd, 3rd, 4th, 5th).
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Objective 3
Model and illustrate meanings of the operations addition and subtraction and describe how they relate.

a.   Demonstrate the joining and separating of sets with twelve or fewer objects and record the results with pictures or symbols.
3A–3B, 3–4, 5A–5B, 5–6, 7A–7B, 7–8, 9A–9B, 9–10, 17A–17B, 17–18, 19A–19B, 19–20, 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

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43I, 61A–61B, 61–62, 63A–63B, 63–64, 65A–65B, 65–66, 67A–67B, 67–68, 69A–69B, 69–70, 71A–71B, 71–72

c.   Use correct vocabulary and symbols to describe addition (i.e., add, "and," plus, +, sum), subtraction (i.e., subtract, minus, -, take away, how many more/fewer), and equals (i.e., =, same as).
43J, 61A–61B, 61–62, 63A–63B, 63–64, 65A–65B, 65–66, 67A–67B, 67–68, 69A–69B, 69–70, 71A–71B, 71–72

d.   Use zero in addition and subtraction sentences.
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181A–181B, 181–182, 183A–183B, 183–184, 185A–185B, 185–186

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a.   Compute addition and subtraction facts to twelve.
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Standard II
Students will identify and use patterns and relations to represent mathematical situations.

Objective 1
Recognize and represent patterns with one or two *attributes*.

a.   Sort and classify objects by one or two *attributes*.
307A–307B, 307–308

b.   Identify, create, and label simple patterns using manipulatives, pictures, and symbolic notation (e.g., ABAB, . . .□ ○ △ □ ○ △, . ..).
1I, R11–R14, 27A–27B, 27–28, 28A–28B, 28–29, 31A–31B, 31–32, 33A–33B, 33–34, 37, 166, 270

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d.   Identify horizontal and vertical patterns on hundreds charts.
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e.   Use patterns to establish skip counting by twos to 20 and by fives and tens to 100.
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f.   Count backward from 10 to 0 and identify the pattern.
245A–245B, 245–246

Objective 2
Recognize and represent relations using mathematical symbols.

a.   Recognize that "=" indicates a relationship in which the quantities on each side of an equation are equal.
Many lessons provide students with the opportunity to meet this objective. Here are a few of the many examples.
49, 297A–297B, 297–298

b.   Recognize that symbols such as □, △, ◇ or in an addition or subtraction equation represent a missing value that will make the statement true (e.g., □ + 3 = 6, 5 +7 = △, 4 = 5 – ◇).
83, 95A, 126, 422, 428, 476

c.   Demonstrate that changing the order of addends does not change the sum (e.g., 3+2=5 and 2+3=5).
93A–93B, 93–94

Standard III
Students will describe, identify, and create simple geometric shapes and describe spatial relationships.

Objective 1
Describe, identify, and create simple geometric shapes.

a.   Identify, name, draw, create, and sort circles, triangles, rectangles, and squares.
R9, 165A–165B, 165–166, 168, 170

b.   Identify circles, triangles, rectangles, and squares in the students' environment.
155I, 165A

c.   Recognize that combining simple geometric shapes can create more complex geometric shapes.
177A–177B, 177–178

Objective 2
Describe simple spatial relationships.

a.   Use and demonstrate words to describe position (i.e., between, before, after, middle, left, right).
R10, 315A–315B, 315–316

b.   Use and demonstrate words to describe distance (i.e., closer, farther).
Related content:
R10, 315A–315B, 315–316

Standard IV
Students will understand and use simple measurement tools and techniques.

Objective 1
Identify measurable attributes of objects and units of measurement.

a.   Identify the appropriate tools for measuring length, weight, volume, temperature, and time.
397A–397B, 397–398

b. Identify the values of a penny, nickel, dime, and quarter.
329I–329J, 331A–331B, 331–332, 333A–333B, 333–334, 335A–335B, 335–336,
337A–337B, 337–338, 339A–339B, 339–341, 343A–343B, 343–344, 345A–345B,
345–346, 347A–347B, 347–348, 353A–353B, 353

**c. Estimate the length of an object by comparing to a nonstandard unit (e.g.,
How many new pencils wide is your desk?).**
365A–365B, 365–366

Objective 2
Use appropriate techniques and tools to determine measurements.

**a. Compare objects, using nonstandard units, according to their length,
weight, or capacity (e.g., pencils/length, books/weight, boxes/volume).**
365A–365B, 365–366, 367–368, 369A–369B, 369–370, 389A–389B, 389–390

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207A–207B, 207–208, 209A–209B, 209–210, 211A–211B, 211–212

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225A–225B, 225–226, 227A–227B, 227–228

**d. Determine the value of a set of the same coins that total 25¢ or less (e.g., a
set of 14 pennies equals 14¢, a set of 5 nickels equals 25¢, a set of 2 dimes
equals 20¢).**
Related content:
330, 331A–331B, 331–332, 333A–333B, 333–334, 335A–335B, 335–336, 337A–337B,
337–338

Standard V
Students will collect and draw conclusions from data and understand basic concepts of
probability.

Objective 1
Collect, organize, and display simple data.

a. Collect physical objects to use as data.
307A–307B, 309A

b.   Collect, represent, and interpret data using tables, tally marks, _pictographs,_ and bar graphs.
307A–307B, 307–308, 309A–309B, 309–310, 311A–311B, 311–312, 313A–313B, 313–314

Objective 2
Determine the likelihood of an event.

a.   Compare events to decide which are more likely, less likely, and equally likely.
403A–403B, 403–404

b.   Relate past events to future events (e.g., The sun set about 6:00 last night, so it will set about the same time tonight).
Related content:
403A–403B, 403–404

Scott Foresman – Addison Wesley Mathematics
to the
Utah Core Curriculum Standards for Mathematics

Grade Two

Standard I
Students will acquire number sense and perform operations with whole numbers.

Objective 1
Represent whole numbers in a variety of ways.

a.   Relate number words to the *numerals* that represent the quantities 0-100.
85A–85B, 85–86

b.   Represent *whole numbers* up to 1,000 in groups of hundreds, tens, and ones using base ten models, and write the numeral representing the set.
389I, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396, 397A–397B, 397–398

c.   Read and write a three-digit numeral, relating it to a set of objects and a pictorial representation.
389I, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396, 397A–397B, 397–398

d.   Write a numeral to 999 in *expanded form* (e.g., 539 is 5 hundreds, 3 tens, 9 ones or 500+30+9).
389I, 395A–395B, 395–396

e.   Identify the place and the value of a given digit in a three-digit numeral (e.g., the two in 281 means 2 hundreds or 200).
389I, 393A–393B, 393–394, 395A–395B, 395–396

f.   Demonstrate multiple ways to represent numbers using symbolic representations (e.g., thirty is the same as two groups of 15, the number of pennies in three dimes, or 58-28).
1I, 25A–25B, 25–26, 35, 389I, 391A–391B, 391–392, 393A–393B, 393–394, 395A–395B, 395–396, 397A–397B, 397–398

Objective 2
Identify simple relationships among whole numbers.

a.   Identify the number that is one more, one less, ten more, or ten less than any whole number up to 100.
97A–97B, 97–98, 99A–99B, 100

b.   Write number sentences using the terms "greater than," "less than," or "equal to," to compare numbers.
91A–91B, 91–92, 389J, 399A–399B, 399–400

c.   Order four whole numbers less than 100 from least to greatest and from greatest to least.
98

d.   Use *ordinal numbers* 1st through 10th.
103A–103B, 103–104

Objective 3
Model and illustrate meanings of the operations of addition and subtraction and describe how they relate.

a.   Demonstrate the joining and separating of sets with eighteen or fewer objects and record the results with pictures or symbols.
1I, 3A–3B, 3–4, 7, 13A–13B, 13–14, 23A, 23, 45B, 45, 47A–47B, 47, 63A–63B, 63, 65B, 65

b.   Model three meanings of subtraction: separating of sets ("take away"), comparison of sets ("how many more/fewer"), and missing addends using objects, pictorial representations, and symbols.
13A–13B, 13–14, 15A–15B, 15–16,29A–29B, 29–30

c.   Separate a given set of objects into two, three, five, or ten groups of equal size.
467A–467B, 467–468, 483A–483B, 483–484, 485A–485B, 485–486

d.   Model addition and subtraction of two-digit whole numbers in a variety of ways.
173I–173J, 179A–179B, 179–180, 181A–181B, 181–182, 209I–209J, 215A–215B, 215–216, 217A–217B, 217–218

e.   Select an addition or subtraction sentence to solve a problem involving joining or separating of sets with eighteen or fewer objects.
9A–9B, 9–10, 19A–19B, 19–20, 31A–31B, 31–32, 57A–57B, 57–58

f.   Recognize that addition number sentences have related subtraction sentences (e.g., 8-5=3, 3+5=8).
27A–27B, 27–28, 36, 65A–65B, 65–66, 227A–227B, 227–228

Objective 4
Use fractions to identify parts of the whole.

a.   Separate geometric shapes and sets of objects into halves, thirds, and fourths using a variety of models and illustrations.
269A–269B, 269–260, 271A–271B, 271–272, 273A–273B, 273–274, 277A–277B, 277–278

b.   Specify a region of a geometric shape (e.g., as "___ out of ___ equal parts" when given four or fewer equal parts).
271A–271B, 271–272

c.   Represent the unit fractions 1/2, 1/3, and 1/4 with objects, pictures, and symbols.
271A–271B, 271–272

Objective 5
Solve whole number problems using addition and subtraction in vertical and horizontal notation.

a.   Use a variety of methods and tools to facilitate computation (e.g., estimation, mental math strategies, paper and pencil, calculator).
1I, 23A–23B, 23–24, 25A–25B, 25–26, 27A–27B, 27–28, 29A–29B, 29–30, 35, 36, 41I, 43A–43B, 43–44, 45A–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, 73, 74, 114, 135A–135B, 135–136, 137A–137B, 137–138, 139A–139B, 139–140, 141A–141B, 141–142, 145A–145B, 145–146, 147A–147B, 147–148, 149A–149B, 149–150, 168, 193A–193B, 193–194, 204, 216, 230, 240, 396, 420, 460, 494

b.   Compute accurately with basic number combinations for addition and subtraction facts to eighteen.
1I, 23A–23B, 23–24, 27A–27B, 27–28, 36, 41I, 43A–43B, 43–44, 45A–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, 73, 74

c.   Add three *whole numbers* with *sums* to eighteen.
49A–49B, 49–50

d.   Find the sum of two-digit whole numbers and describe the process used.
173I–173J, 175A–175B, 175–176, 177A–177B, 177–178, 179A–179B, 179–180, 181A–181B, 181–182

Standard II
Students will identify and use patterns and relations to represent mathematical situations.

Objective 1
Recognize and represent patterns having multiple attributes.

a.   Sort, classify, and label objects by three or more attributes.
See Grade 1.

b.   Identify and label repeating and growing patterns using objects, pictures, and symbolic notation (e.g., ABAABBAAABBB . . .).
413A–413B, 413–414

c.   Identify repeating and growing patterns in the environment.
413B

d.   Construct models and skip count by twos, threes, fives, and tens and relate to repeated addition.
99A–99B, 99–100, 467A–467B, 467–468, 469–470

Objective 2
Recognize and represent relations using mathematical symbols.

a.   Recognize that " ≠" indicates a relationship in which the quantities on each side are not of equal value.
Related Content:
91A–91B, 91–92, 115A–115B, 115–116, 399A–399B, 399–400

b.   Recognize that symbols such as □, △, ◊ in an addition or subtraction equation represent a value that will make the statement true (e.g., □ + 3=6, 5+7=△, 7=9- ◊).
These pages prepare students to meet this objective.
29A–29B, 29–30, 35, 54, 159A–159B, 159–160, 443A–443B, 443–444

c.   Demonstrate that changing the order of *addends* does not change the *sum* (e.g., 3+2+7=12, 7+3+2=12) and that changing the grouping of three or more *addends* does not change the *sum* (e.g., (2+3)+7=12, 2+(3+7)=12).
49A–49B, 49–50

Standard III
Students will describe, identify, and create geometric shapes and describe spatial relationships.

Objective 1
Describe, identify, and create geometric shapes.

a.   Identify, name, draw, sort, and compare circles, triangles, and *parallelograms.*
249A–249B, 249–250

b.   Identify and name spheres, cones, and cylinders.
247A–247B, 247–248

c.   Find and identify familiar geometric shapes in the students' environment.
247B, 247–248, 249B

d.   Determine whether a circle, triangle, square, or rectangle has *a line of symmetry.*
These pages will help students meet this objective.
261A–261B, 261–262, 266

Objective 2
Describe spatial relationships.

a.   Create and use verbal or written instructions to move within the environment.
325A

b.   Find and name locations using coordinates (A, 1).
325A–325B, 325–326

c.   Identify shapes in various orientations (e.g., $\triangle$ and $\triangledown$).
259A–259B, 259–260

Standard IV
Students will understand and use measurement tools and techniques.

Objective 1
Identify measurable attributes of objects and units of measurement.

a.   Sequence a series of events of a day in order by time (e.g., breakfast at 7:00, school begins at 9:00).
301A–301B, 301–302

b.   Identify the name and value of a penny, nickel, dime, quarter, and dollar.
109A–109B, 109–110, 111A–111B, 111–112, 121A–121B, 121–122

c.   Estimate length, capacity, and weight using customary units.
343A, 343–344, 345A–345B, 345–346, 353, 357B, 357–358, 363, 365A–365B, 366

Objective 2
Use appropriate techniques and tools to determine measurements.

a.   Compare and order objects, using nonstandard units, according to their length, weight, or *capacity.*
341A–341B, 341–342, 353A–353B, 353–354, 363A–363B, 363–364

b.   Measure length using inches and feet, weight using pounds, and capacity using cups.
343A–343B, 343–344, 355A–355B, 355–356, 365A–365B, 365–366

c.   Determine the value of a set of up to five coins that total $1.00 or less (e.g., two quarters and one dime equals 60¢; three dimes, one nickel, and one penny equals 36¢).
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

d.   Read, tell, and write time to the hour and half-hour.
291A–291B, 291–292, 293A–293B, 293–294, 295A–295, 295–296

e.   Use a calendar to determine the day of the week and date.
303A–303B, 303–304

f.   Determine the *perimeter* of a square, triangle, and rectangle by measuring with nonstandard units.
See Grade 3.

Standard V
Students will collect and draw conclusions from data and understand basic concepts of probability.

Objective 1
Collect, organize, and display simple data.

a.   Gather data by vote or survey.
313A–313B, 313–314, 322

b.   Sort, classify, and organize data in a variety of ways.
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

c.   Use a variety of methods to organize, display, and label information, including keys, using *pictographs*, tallies, bar graphs, and organized tables.
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

d.   Report information from a data display.
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

Objective 2
Determine the likelihood of an event.

a.   Predict events that will be the same in one day or one week.
These pages prepare students to meet this objective.
339J, 373A–373B, 373–374, 375A–375B, 375–376

b.   Predict the outcome when there are only two possible outcomes (e.g., tossing a coin).
These pages prepare students to meet this objective.
339J, 373A–373B, 373–374, 375A–375B, 375–376

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Grade Three

Standard I
Students will acquire number sense and perform operations with whole numbers and simple fractions.

Objective 1
Represent whole numbers in a variety of ways.

a.   Model, read, and write *whole numbers* up to 10,000 using base ten models, pictures, and symbols.
2I–2J, 6A–6B, 6–7, 8A–8B, 8–9, 10A–10B, 10–11, 12A–12B, 12–13

b.   Write a *numeral* when given the number of thousands, hundreds, tens, and ones.
2I, 6A–6B, 6–7, 8–9, 10A–10B, 10–11

c.   Write a number up to 9,999 in expanded form (e.g., 6,539 is 6 thousands, 5 hundreds, 3 tens, 9 ones or 6000+500+30+9).
6B, 6–7, 8B, 8–9, 10B, 10–11, 12–13

d.   Identify the place and the value of a given digit in a four-digit numeral.
10B, 10–11

e.   Demonstrate multiple ways to represent numbers using models and symbolic representations (e.g., fifty is the same as two groups of 25, the number of pennies in five dimes, or 75-25).
2I–2J, 6A, 6–7, 8B, 8–9, 10A–10B, 10–11

Objective 2
Identify relationships among whole numbers.

a.   Use a variety of strategies to determine whether a number is even or odd.
24, 258, 277

b.   Identify the number that is ten more, ten less, 100 more, or 100 less than any *whole number* up to 1,000.
These pages can be used to introduce this objective.
24B, 25–26

c.   Compare the relative size of numbers (e.g., 31 is large compared to 4, about half as big as 60, close to 27).
These pages can be used to introduce this objective.
12, 18A–18B, 18–21

d.   Compare whole numbers up to four digits using the symbols <, >, and =.
18A–18B, 18–21

e.   Order and compare whole numbers on a number line.
18, 20, 22–23

Objective 3
Model and illustrate meanings of the operations of addition, subtraction, multiplication, and division and describe how they relate.

a.   Model addition and subtraction of two- and three-digit *whole numbers* in a variety of ways.
126A–126B, 126–127, 128A–128B, 128–131,132A–132B, 132–135, 150A–150B, 150–151, 152A–152B, 152–155

b.   Model multiplication of a one-digit *factor* by a one-digit factor using various methods (e.g., repeated addition, rectangular *arrays*, manipulatives, pictures) and connect the representation to an *algorithm*.
258I–258J, 260A–260B, 260–261, 262A–262B, 262–265, 266A–266B, 266–267, 270A–270B, 270–273

c.   Model division as sharing equally and as repeated subtraction using various methods (e.g., rectangular arrays, manipulatives, number lines, pictorial representations).
368I–368J, 370A–370B, 370–371, 372A–372B, 372–373, 374A–374B, 374–377

d.   Demonstrate, using objects, that multiplication and division are inverse operations (e.g., 3x4=12; thus, 12÷4=3 and 12÷3=4).
384B, 384–385

e.   Select and write an addition, subtraction, or multiplication sentence to solve a problem related to the students' environment, and write a story problem that relates to a given equation.
76A–76B, 76–78, 266A–266B, 266–267, 347

f.   Demonstrate the effect of place value when multiplying whole numbers by 10.
612A–612B, 612–615

Objective 4
Use fractions to communicate parts of the whole.

a.   Identify the denominator of a fraction as the number of equal parts in the whole region or set.
502A–502B, 502–503

b.   Identify the numerator of a fraction as the number of equal parts being considered.
502A–502B, 502–503

c.   Divide *regions* and sets of objects into equal parts using a variety of objects, models, and illustrations.
496I, 498A–498B, 498–501

d.   Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, sixths, and eighths.
498A–498B, 498–501, 502A–502B, 502–503

e.   Determine which of two fractions is greater using models or illustrations.
506A–506B, 506–509

Objective 5
Solve whole number problems using addition, subtraction, multiplication, and division in vertical and horizontal notation.

a.   Use a variety of methods and tools to facilitate computation (e.g., estimation, mental math strategies, paper and pencil, calculator).
80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89, 90–91, 94A–94B, 94–95, 96A–96B, 96–97, 98A–98B, 98–101, 167, 260A–260B, 260–261, 262A–262B, 262–265, 276A–

276B, 276–279, 280A–280B, 280–281, 282A–282B, 282–283, 286A–286B, 286–287, 288A–288B, 288–291, 314J, 316A–316B, 316–317, 318A–318B, 318–319, 320A–320B, 320–323, 324A–324B, 324–327, 370A–370B, 370–371, 372A–372B, 372–373, 384A–384B, 384–385, 386A–386B, 386–387, 388A–388B, 388–389, 390A–390B, 390–391, 392A–392B, 392–393, 396A–396B, 396–397, 401, 402A–402B, 402–403, 610J, 612A–612B, 612–614, 616A–616B, 616–617,618A–618B, 618–621, 622A–622B, 622–623, 640A–640B, 640–641

b.   Find the sum of any two *addends* with three or fewer digits, including monetary amounts, and describe the process used.
70A–70B, 70–71, 80A–80B, 80–81, 82A–82B, 82–85, 126A–126B, 126–127, 128A–128B, 128–131, 132A–132B, 132–135, 162A–162B, 162–165

c.   Find the *difference* of two-digit *whole numbers* and describe the process used.
148A–148B, 148–149

d.   Find the *products* for multiplication facts through ten times ten and describe the process used.
276A–276B, 276–279, 280A–280B, 280–281, 282A–282B, 282–283, 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

Standard II
Students will use patterns and relations to represent mathematical situations.

Objective 1
Recognize and create patterns with given attributes.

a.   Create and extend *repeating* and *growing patterns* using objects, numbers, and tables.
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

b.   Record results of patterns created using manipulatives, pictures, and numeric representations and describe how they are extended.
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

Objective 2
Recognize and represent mathematical situations using patterns and symbols.

a.   Recognize that symbols such as □, △, or ◊ in an addition, subtraction, or multiplication equation, represent a value that will make the statement true (e.g., 5+7=△, □-3=6, ◊=2x4).
76A–76B, 76–77, 89, 291, 293, 614, 629, 653–655

b.   Solve equations involving equivalent expressions (e.g., 6+4 = □+7).
168A–168B, 168–169

c.   Use the >, <, and = symbols to compare two *expressions* involving addition and subtraction (e.g., 4+6 □3+2; 3+5 ◊16-9).
168A–168B, 168–169

d.   Demonstrate that grouping three or more *addends* does not change the *sum* (e.g., 3+(2+7)=12, (7+3)+2=12) and changing the order of *factors* does not change the *product* (e.g., 3x7=21, 7x3=21).
66B, 66–69, 262A, 263–264

e.   Use a variety of manipulatives to model the *identity property of addition* (e.g., 3+0=3), the *identity property of multiplication* (e.g., 7x1=7), and the *zero property of multiplication* (e.g., 6x0=0).
67, 286A–286B, 286–287

Standard III
Students will use spatial reasoning to describe, identify, and create geometric shapes.

Objective 1
Describe, identify, and create geometric shapes.

a.   Identify and draw *points*, *lines*, *line segments*, and *endpoints*.
442A–442B, 442–443

b.   Identify and draw *lines of symmetry* on triangles, squares, circles, and rectangles.
460A–460B, 460–461

c.   Determine whether an angle is *right, obtuse*, or *acute* by comparing the angle to the corner of a rectangle.
444B, 444–445

d.   Classify *polygons* (e.g., *quadrilaterals*, pentagons, hexagons, octagons) by the number of sides and corners.
426I, 432A–432B, 432–433, 446A–446B, 446–448, 450A–450B, 450–452, 454A–454B, 454–455, 474B, 474–475

e.   Identify, make, and describe cubes (e.g., a cube has six square *faces*, eight *vertices*, and twelve *edges*).
428A–428B, 428–431, 432A–432B, 432–433

Objective 2
Describe spatial relationships.

a.   Give directions to reach a location.
218A–218B, 218–221

b.   Use coordinates (A, 1) or regions to locate positions on a map.
218B, 218–220

c.   Demonstrate and use horizontal and vertical lines.
These pages prepare students to meet this objective.
442A–442B, 442–443, 450A

Objective 3
Visualize and identify geometric shapes after applying transformations.

a.   Demonstrate the effect of a *slide* (*translation*) or *flip* (*reflection*) on a figure, using manipulatives.
456A–456B, 456–459

b.   Determine whether two polygons are *congruent* by sliding, flipping, or turning to physically fit one object on top of the other.
456B, 456–459

c.   Identify *two-dimensional* shapes (*nets*) that will fold to make a cube.
426I, 431

d.   Create a *polygon* that results from combining other polygons.
These pages can be adapted to introduce this objective.
449, 452, 454B, 458

Standard IV
Students will understand and use measurement tools and techniques.

Objective 1
Identify and describe measurable attributes of objects and units of measurement.

a.   Recognize the two systems of measurement: *metric* and *customary*.
532A–532B, 532–533, 534A–534B, 534–535, 536A–536B, 536–537, 538A–538B, 538–539, 582A–582B, 582–583, 584A–584B, 584–587, 680A–680B, 680–683, 684A–684B, 684–687, 690A–690B, 690–693, 694A–694B, 694–695

b.   Describe the relationship between metric units of length (i.e., centimeter, meter).
582A–582B, 582–583, 584A–584B, 584–587

c.   Describe the relationship among customary units of length (i.e., inch, foot, yard) and the relationship between customary units of *capacity* (i.e., cup, quart).
536A–536B, 536–537, 538A–538B, 538–539, 680A–680B, 680–683

d.   Estimate length, capacity, and weight using metric and customary units.
496J, 532A, 532–533, 535, 582B, 582–583, 629, 678I, 680–681, 682, 684B, 685, 690A, 691–692

Objective 2
Use appropriate techniques and tools to determine measurements.

a.   Measure the length of objects to the nearest centimeter, meter, half-inch, foot, and yard.
534A–534B, 534–535, 536A–536B, 536–537, 582A–582B, 582–583, 584A–584B, 584–585

b.   Measure *capacity* using cups and quarts, and measure weight using pounds.
680A–680B, 680–683, 690A–690B, 690–693

c.   Determine the value of a combination of coins and bills that total $5.00 or less and write the monetary amounts using the dollar sign and decimal notation.
36A–36B, 36–39

d.   Identify the number of hours in a day, the number of days in a year, and the number of weeks in a year.
200A–200B, 200–201

e.   Read, tell, and write time to the quarter-hour.
192A–192B, 192–195

f.   Identify any given day of the month (e.g., the third Wednesday of the month is the 18th).
200B, 200–201

g.   Read and record the temperature to the nearest ten degrees using a Fahrenheit thermometer.
696A–696B, 696–697

h.   Estimate and measure the *perimeter* and *area* of rectangles by measuring with nonstandard units.
464A–464B, 464–467, 468A–468B, 468–471

Standard V
Students will collect and organize data to make predictions and identify basic concepts of probability.

Objective 1
Collect, organize, and display data to make predictions.

a.   Collect, read, represent, and interpret data using tables, graphs, and charts, including keys (e.g., pictographs, bar graphs).
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, 234–235, 236A–236B, 236–237

b.   Make predictions based on a data display.
204–206, 210, 214–215, 222A–222B, 222–223, 228A, 228–231, 232A–232B, 232–235, 236B

Objective 2
Identify basic concepts of probability.

a.   Describe the results of events using the terms "certain," "equally likely," and "impossible."
678J, 700A–700B, 700–701, 702

b.   Predict outcomes of simple activities (e.g., a bag contains three red marbles and five blue marbles. If one marble is selected, is it more likely to be red or blue?).
678J, 702A–702B, 702–703, 704A–704B, 704–707

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Grade Four

Standard I
Students will acquire number sense and perform operations with whole numbers, simple fractions, and decimals.

Objective 1
Represent whole numbers and decimals in a variety of ways.

a.   Model, read, and write numerals from tenths to 100,000.
4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11, 624A–624B, 624–627, 628A–628B, 628–629

b.   Write a *whole number* up to 99,999 in *expanded form* (e.g., 76,539 is 7 ten-thousands, 6 one-thousands, 5 hundreds, 3 tens, 9 ones or 70,000+6,000+500+30+9).
4–5, 8B, 8–9, 10B, 10–11

c.   Identify the place and the value of a given digit in a five-digit numeral, including decimals to tenths.
4–7, 628A–628B, 628–629

d.   Demonstrate multiple ways to represent numbers by using models and symbolic representations (e.g., 36 is the same as the square of six, three dozen, or 9x4).
4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11

e.   Identify *square numbers* using models.
323

Objective 2
Identify relationships among whole numbers and decimals.

a.   Identify the number that is 100 more, 100 less, 1,000 more, or 1,000 less than any *whole number* up to 10,000.
These pages prepare students to meet this objective.
4A–4B, 4–7, 8A–8B, 8–9, 10A–10B, 10–11

b.   Compare the relative size of numbers (e.g., 100 is small compared to a million, but large compared to 5).
22A–22B, 22–23

c.   Compare whole numbers up to five digits using the symbols <, >, and =.
16A–16B, 16–19

d.   Identify a whole number that is between two given whole numbers.
16A–16B, 16–19

e.   Order and compare whole numbers and decimals to tenths on a number line.
16–18, 628B, 630

Objective 3
Model and illustrate meanings of the four operations and describe how they relate.

a.   Use models to represent multiplication of a one- or two-digit *factor* by a two-digit factor (up to 30) using a variety of methods (e.g., rectangular *arrays*, manipulatives, pictures) and connect the representation to an *algorithm*.
254J, 258A–258B, 258–261, 262A–262B, 262–263, 264A–264B, 264–267, 270A–270B, 270–273

b.   Recognize that division by zero is not possible (e.g., 6÷0 is undefined).
152A–152B, 152–153

c.   Select and write a multiplication or division sentence to solve a problem related to the students' environment and write a story problem that relates to a given equation.
396A–396B, 396–400

d.   Represent division of a two-digit *dividend* by a one-digit *divisor*, including whole number remainders, using various methods (e.g., rectangular arrays, manipulatives, pictures) and connect the representation to an algorithm.
364I–365J, 372A–372B, 372–373, 374A–374B, 374–377, 380A–380B, 380–383

e.   Demonstrate that multiplication and division are inverse operations (e.g., 3x4=12; thus, 12÷4=3 and 12÷3=4).
148A–148B, 148–149

f.   Describe the effect of place value when multiplying whole numbers by 10 and 100.
256A–256B, 256–257

Objective 4
Use fractions to communicate parts of the whole.

a.   Divide regions and sets of objects into equal parts using a variety of models and illustrations.
500A–500B, 500–501, 502A–502B, 502–503

b.   Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, fifths, sixths, eighths, and tenths.
500A–500B, 500–501, 504A–504B, 504–505

c.   Relate fractions to decimals that represent tenths.
624A–624B, 624–627

d.   Determine which of two fractions is greater using models or illustrations.
522A–522B, 522–523, 524A–524B, 524–525

e.   Find equivalent fractions for one-half, one-third, and one-fourth using manipulatives and pictorial representations.
516A–516B, 516–519

Objective 5
Solve whole number problems using addition, subtraction, multiplication, and division in vertical and horizontal notation.

a.   Determine when it is appropriate to use estimation, mental math strategies, paper and pencil, or a calculator.
282A–282B, 282–283, 338A–338B, 338–339

b.   Find the *sum* and *difference* of four-digit numbers and describe the process used.
62A–62, 62–63, 76A–76B, 76–79, 82A–82B, 82–85, 86A–86B, 86–87

c.   Multiply two- and three-digit *factors* by a one-digit factor and describe the process used.
270A–270B, 270–272, 274A–274B, 274–275

d.   Divide a two-digit *whole number dividend* by a one-digit *divisor*, with a *remainder* of zero, and describe the process used.
380–383

Standard II
Students will use patterns and relations to represent mathematical situations.

Objective 1
Recognize, describe, and use patterns and identify the attributes.

a.   Represent and analyze *repeating* and *growing patterns* using objects, pictures, numbers, and tables.
37, 90A–90B, 90–91, 122I, 128A–128B, 128–131, 136A–136B, 136–137, 140A–140B, 140–142, 256, 314, 366A–366B, 366–367, 406, 454, 641

b.   Recognize and extend multiples and other number patterns using a variety of methods.
37, 90A–90B, 90–91, 122I, 128A–128B, 128–131, 136A–136B, 136–137, 140A–140B, 140–142, 256A–256B, 256–257, 314A–314B, 314–315, 366A–366B, 366–367, 406A–406B, 406–407, 641

Objective 2
Recognize, represent, and solve mathematical situations using patterns and symbols.

a.   Solve equations involving equivalent *expressions* (e.g., 6x2= ☐ x3 or 6x ☐=9+9).
100A–100B, 100–101, 166A–166B, 166–167

b.   Use the <, >, = symbols to compare two expressions involving addition, subtraction, multiplication, and division (e.g., 5x4◇9÷3).
134, 135

c.   Recognize that a given variable maintains the same value throughout an equation or expression (e.g., ☐+☐=8; ☐=4).
396–397, 396A–396B

d.   Demonstrate that changing the order of *factors* does not change the *product* (e.g., 2x3=6, 3x2=6) and that the grouping of three or more factors does not change the product (e.g., (2x3)x1=6; 2x(3x1)=6).
129, 288A–288B, 288–289

e.   Demonstrate the distribution of multiplication over addition using a rectangular *array* (e.g., 8x14=8 rows of 10 plus 8 rows of 4).
132A–132B, 132–135, 264A–264B, 264–267

Standard III
Students will use spatial reasoning to recognize, describe, and identify geometric shapes.

Objective 1
Describe, identify, and analyze characteristics and properties of geometric shapes.

a.   Identify and draw *parallel lines* and *intersecting lines*.
440A–440B, 440– 442

b.   Identify and draw lines of symmetry on a variety of *polygons*.
456A–456B, 456–457

c.   Identify and describe *quadrilaterals* (i.e., rectangles, squares, *rhombuses*, *trapezoids*, kites).
444A–444B, 444–447

d.   Identify *right*, *obtuse*, and *acute* angles.
440A–440B, 440– 443

e.   Compare two polygons to determine whether they are *congruent* or *similar*.
452A–452B, 452–455, 458A–458B, 458–459

f.   Identify and describe *cylinders* and *rectangular prisms*.
434A–434B, 434–437

Objective 2
Specify locations and describe spatial relationships using grids and maps.

a.   Locate positions on a map of Utah using *coordinates* or *regions*.
Related content:
212A–212B, 212–215

b.   Give the coordinates or regions of a position on a map of Utah.
Related content:
212A–212B, 212–215

Objective 3
Visualize and identify geometric shapes after applying transformations.

a.   Identify a *slide* (*translation*) or a *flip* (*reflection*) of a geometric shape using manipulatives.
452A–452B, 452–455

b.   Relate *cubes*, *cylinders*, *cones*, and *rectangular prisms* to the *two-dimensional* shapes (*nets*) from which they were created.
434A, 435

Standard IV
Students will understand and use measurement tools and techniques.

Objective 1
Identify and describe measurable attributes of objects and units of measurement.

a.   Describe the relationship among *metric* units of length (i.e., millimeter, centimeter, meter), between metric units of volume (i.e., milliliter, liter), and between metric units of weight (i.e., gram, kilogram).
652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 658A–658B, 658–660

b.   Identify a mile as a measure of distance and its relationship to other *customary* units of length.
588A–588B, 588–589, 596A–596B, 596–599

c.   Describe the relationship among customary units of *capacity* (i.e., cup, pint, quart, gallon).
592A–592B, 592–593, 596A–596B, 596–599

d.   Estimate length, capacity, and weight using metric and customary units.
588B, 588–589, 591, 592B, 592, 594A–594B, 594–595, 652B, 652–653, 654, 656A, 656

Objective 2
Determine measurements using appropriate tools and formulas.

a.   Measure the length of objects to the nearest centimeter, meter, quarter-inch, foot, and yard.
588A–588B, 588–589, 590A–590B, 590–591, 652A–652B, 652–653

b.   Measure *capacity* using milliliters, liters, cups, pints, quarts, and gallons and measure weight using grams, kilograms, and pounds.
592A–592B, 592–593, 594A–594B, 594–595, 654A–654B, 654–655, 656A–656B, 656–657

c.   Read, tell, and write time to the nearest minute, identifying a.m. and p.m.
190A–190B, 190–191, 192A–192B, 192–195

d.   Read and record the temperature to the nearest degree, in Fahrenheit, using a thermometer.
664A–664B, 664–665

e.   Determine the value of a combination of coins and bills that total $20.00 or less.
2J, 30A–30B, 30–31

f.   Count back change for a single-item purchase and determine the amount of change to be received from a multiple-item purchase.
32A–32B, 32–33

g.   Determine possible *perimeters*, in whole units, for a rectangle with a fixed area and determine possible areas when given a rectangle with a fixed perimeter.
474A–474B, 474–475

Standard V
Students will collect and organize data to make predictions and use basic concepts of probability.

Objective 1
Collect, organize, and display data to make predictions and answer questions.

a.   Identify a question that can be answered by collecting data.
230A–230B, 230–231

b.   Collect, read, and interpret data from tables, graphs, charts, surveys, and observations.
138–139, 140A–140B, 140–142, 188J, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 220–221, 222A–222B, 222–223, 230A–230B, 230–231, 232A–232B, 232–233

c.   Represent data using tables, line plots, line graphs, and bar graphs.
138–139, 140A–140B, 140–142, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 220–221, 222A–222B, 222–223

d.   Identify and distinguish between *clusters* and *outliers* of a data set.
206A–206B, 206–207

Objective 2
Use basic concepts of probability.

a.   Describe the results of investigations involving random outcomes as simple ratios (e.g., 4 out of 9, 4/9).
706A–706B, 706–709

b.   Predict outcomes of simple experiments, including with and without replacement, and test the predictions.
710A–710B, 710–711

Scott Foresman – Addison Wesley Mathematics
to the
Utah Core Curriculum Standards for Mathematics

Grade Five

Standard I
Students will acquire number sense and perform operations with whole numbers, simple fractions, and decimals.

Objective 1
Represent whole numbers and decimals in a variety of ways.

a.   Model, read, and write numerals from hundredths to one millions.
4A–4B, 4–5, 8A–8B, 8–10, 14A–14B, 14–17

b.   Write a *whole number* up to 999,999 in *expanded form* (e.g., 876,539 = 8 hundred-thousands, 7 ten-thousands, 6 thousands, 5 hundreds, 3 tens, 9 ones or 8x100,000 + 7x10,000 + 6x1,000 + 5x100 + 3x10 + 9).
4A–4B, 4–5

c.   Demonstrate multiple ways to represent whole numbers by using models and symbolic representations (e.g., 108=2x50+8; 108=10^2 + 8).
4A–4B, 4–5, 8A–8B, 8–10, 14A–14B, 14–17

d.   Classify whole numbers from 2 to 20 as *prime* or *composite* and 0 and 1 as neither prime nor composite, using models.
164A–164B, 164–167

e.   Represent repeated factors using *exponents* up to three (e.g., 8=2x2x2=2^3).
17, 167

Objective 2
Identify relationships among whole numbers, fractions, decimals, and percents.

a.   Order and compare *whole numbers*, fractions (including mixed numbers), and decimals using a variety of methods and symbols.
6A–6B, 6–7, 12A–12B, 12–13, 418A–418B, 418–419, 420A–420B, 420–423

b.   Rewrite mixed numbers and improper fractions from one form to the other.
400A–400B, 400–401

c.   Find the least common denominator for two fractions.
464A–464B, 464–465

d.   Represent commonly used fractions as decimals and percents in various ways (e.g., objects, pictures, calculators).
426-429, 430–431
These pages prepare students to meet this objective.
668A–668B, 668–669

Objective 3
Model and illustrate meanings of operations and describe how they relate.

a.   Identify the *dividend*, *divisor*, and *quotient* regardless of the division symbol used.
These pages prepare students to meet this objective.
152A–152B, 152–155

b.   Determine whether a whole number is divisible by 2, 3, 5, 9, and/or 10, using the *rules of divisibility*.
162A–162B, 162–163

c.   Represent remainders as *whole numbers*, decimals, or fractions and describe the meaning of remainders as they apply to problems from the students' environment (e.g., If there are 53 people, how many vans are needed if each van holds 8 people?).
168A–168B, 168–169

d.   Model addition, subtraction, and multiplication of fractions and decimals in a variety of ways (e.g., using objects and a number line).
38A–38B, 38–39, 40A–40B, 40–41, 88A–8B, 88–91, 92A–92B, 92–93, 94A–94B, 94–97, 160A–160B, 160–161, 230A–230B, 230–231, 232A–232B, 232–233, 234A–234B, 234–237, 460S–460B, 460–461, 462A–462B, 462–463, 464A–464B, 464–465, 466A–466B, 466–469, 472A–472B, 472–473, 476A–476B, 476–477, 478A–478B, 478–481, 490A–490B, 490–493, 496A–496B, 496–499, 500A–500B, 500–501, 502A–502B, 502–503

e.   Model strategies for whole number multiplication (e.g., partial product, lattice) or division (e.g., partial quotient).
72A–72B, 72–75, 76A–76B, 76–77, 152A–152B, 152–155, 156A–156B, 156–157, 158A–158B, 158–159, 214A–214B, 214–217, 218A–218B, 218–221, 222A–222B, 222–223, 224A–224B, 224–225

f.   Select or write the number sentences that can be used to solve a two-step problem.
226A–226B, 226–227

g.   Describe the effect of place value when multiplying and dividing whole numbers and decimals by 10, 100, and 1,000.
84A–84B, 84–85

Objective 4
Use fractions to communicate parts of the whole.

a.   Divide regions, sets of objects, and line segments into equal parts using a variety of models and illustrations.
394–397, 398A–398B, 398–399, 404–405

b.   Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths.
394A–394B, 394–397

c.   Represent the simplest form of a fraction in various ways (e.g., objects, pictorial representations, symbols).
416A–416B, 416–417

d.   Represent mixed numbers and improper fractions in various ways (e.g., rulers, objects, number lines, symbols).
400A–400B, 400–401

e.   Rename *whole numbers* as fractions with different denominators (e.g., 5=5/1, 3=6/2, 1=7/7).
Related content:
394–397

f.   Model and calculate equivalent forms of a fraction and describe the process used.
410A–410B, 410–411, 412A–412B, 412–413, 414A–414B, 414–415, 426A–426B, 426–429, 668A–668B, 668–669

Objective 5
Solve problems using the four operations with whole numbers, decimals, and fractions.

a.   Determine when it is appropriate to use estimation, mental math strategies, paper and pencil, or a calculator.
22A–22B, 22–25, 28A–28B, 28–30, 32B, 37, 38A–38B, 38–39, 40A–40B, 40–41, 66A–66B, 66–67, 68A–68B, 68–69, 70A–70B, 70–71, 72A–72B, 72–75, 77, 86A–86B, 86–87, 88A–88B, 88–91, 92A–92B, 92–93, 94A–94B, 94–97, 106B, 130J, 136A–136B, 136–137, 138A–138B, 138–141, 152A–152B, 152–155, 156A–156B, 156–157, 161, 162B, 164B, 168B, 172B, 180B, 202A–202B, 202–203, 204A–204B, 204–207, 214A–214B, 214–217, 221, 222B, 230A–230B, 230–231, 234B, 262B, 273, 276B, 305, 342B, 352B, 412B, 414B, 426B, 464B, 465, 474A–474B, 474–475, 477, 481, 492, 494A–494B, 494–495, 497, 530, 552B, 562B, 563, 615, 617, 650, 651, 670A–670B, 670–671, 672A–672B, 672–673, 702B

b.   Use estimation strategies to determine whether results obtained using a calculator are reasonable.
Related content:
28A–28B, 28–31, 68A–68B, 68–69, 86A–86B, 86–87, 138A–138B, 138–141, 204A–204B, 204–207

c.   Multiply up to a three-digit *whole number* by a one- or two-digit whole number.
72A–72B, 72–75, 76A–76B, 76–77

d.   Divide up to a three-digit whole number *dividend* by a one-digit *divisor*.
136A–136B, 136–137, 148A–148B, 148–151, 152A–152B, 152–155, 156A–156B, 156–157, 200I, 214A–214B, 214–216, 218A–218B, 218–221

e.   Add and subtract decimals with digits to the hundredths place (e.g., 35.42+7.2; 75.2–13.45).
2J, 38A–38B, 38–39, 40A–40B, 40–41

f.   Add, subtract, and multiply fractions.
458J, 460A–460B, 460–461, 462A–462B, 462–463, 466A–466B, 466–468, 490A–490B, 490–491, 496A–496B, 496–499, 502A–502B, 504A–504B, 504–505

g.   Simplify *expressions*, without *exponents*, using the *order of operations*.
172A–172B, 172–173

Objective 6
Model and illustrate integers.

a.   Identify, read, and locate *integers* on a number line.
712A–712B, 712–714

b.   Describe situations where integers are used in the students' environment.
712B, 712

Standard II
Students will use patterns and relations to represent and analyze mathematical situations using algebraic symbols.

Objective 1
Recognize, analyze, and use patterns and describe their attributes.

a.   Analyze and make predictions about patterns involving *whole numbers*, decimals, and fractions using a variety of tools including organized lists, tables, objects, and variables.
14A–14B, 14–17, 66–67, 84B, 84–85, 106A–106B, 106–107, 136A–136B, 136–137, 142–143, 144A–144B, 144–145, 202

b.   Extend patterns and describe a rule for predicting the next element.
14A–14B, 14–17, 66–67, 84B, 84–85, 106A–106B, 106–107, 136A–136B, 136–137, 142–143, 144A–144B, 144–145, 202

Objective 2
Represent, solve, and analyze mathematical situations using algebraic symbols.

a.   Recognize a variety of symbols for multiplication and division including x, •, and * as symbols for multiplication and ÷, ☐, and a fraction bar (/ or -) as division symbols.
These pages can be used to introduce this objective.
66A–66B, 66–67, 132A–132B, 132–135, 148A–148B, 148–151

b.   Recognize that a variable ($\Diamond$, n, x) represents an unknown quantity.
100A–100B, 100–103, 706A–706B, 706–709

c.   Solve one-step equations involving *whole numbers* and a single variable (e.g., n÷7=3).
108A–108B, 108–109, 137, 700A–700B, 700–701, 702A–702B, 702–703, 704–705

d.   Recognize that the answer to a multiplication problem involving a factor of zero is equal to zero (e.g., 0x45=0).
76–77

e.   Use expressions or one-step equations to represent real-world situations.
100–103, 104B, 104–105, 108B, 108–109, 137, 700B, 700–701, 702–703, 704–705

f.   Use the *associative*, *commutative*, and *distributive properties* to compute with whole numbers.
22B, 22–25, 66A–66B, 66–67, 70A–70B, 70–71

Standard III
Students will use spatial reasoning to recognize, describe, and identify geometric shapes and principles.

Objective 1
Describe, identify, and analyze characteristics and properties of geometric shapes.

a.   Identify and draw *perpendicular lines*.
328A–328B, 328–331

b.   Draw, label, and describe rays and describe an angle as two rays sharing a common endpoint.
328A–328B, 328–331, 332A–332B, 332–335

c.   Label an angle as *acute*, *obtuse*, *right*, or *straight*.
332A–332B, 332–335

d.   Identify and describe *equilateral*, *isosceles*, *scalene*, *right*, *acute*, and *obtuse* triangles.
342A–342B, 342–345

e.   Identify the *vertex* of an angle or the *vertices* of a polygon.
332B, 332, 340–341

f.   Compare *corresponding angles* of two triangles and determine whether the triangles are *similar*.
360B, 361

g.   Identify and describe *pyramids* and *prisms*.
594A–594B, 594–597

Objective 2
Specify locations and describe spatial relationships using coordinate geometry.

a.   Locate points defined by ordered pairs in the first *quadrant*.
174A–174B, 174–175, 724A–724B, 724–727

b.   Write an ordered pair for a point in the first quadrant.
174A–174B, 174–175, 724A–724B, 724–727

c.   Specify possible paths between locations on a *coordinate grid* and compare distances of the various paths.
These pages can be used to introduce this objective.
174A–174B, 174–175, 724A–724B, 724–727

Objective 3
Visualize and identify geometric shapes after applying transformations.

a.   Identify a *slide* (*translation*) or a *flip* (*reflection*) of a shape across a line.
364A–364B, 364–367

b.   Demonstrate the effect of a *turn* (*rotation*) on a figure using manipulatives.
364A–364B, 364–367

c.   Relate *pyramids* and *prisms* to the *two-dimensional* shapes (*nets*) from which they were created.
598A–598B, 598–601

Standard IV
Students will understand and apply measurement tools and techniques.

Objective 1
Identify and describe measurable attributes of objects and units of measurement.

a.   Describe the relationship among *metric* units of length (i.e., millimeter, centimeter, meter, kilometer).
534A–534B, 534–535, 536A–536B, 536–539

b.   Describe the relationship among *customary* units of weight (i.e., ounce, pound).
620A–620B, 620–621

c.   Identify the correct units of measurement for *volume*, *area*, and *perimeter* in both metric and customary systems.
540A–540B, 540–541, 548A–548B, 548–549, 550A–550B, 550–551, 552A–552B, 552–553, 554A–554B, 554–555, 610A–610B, 610–613

d.   Estimate length, volume, weight, and area using metric and customary units.
537, 538, 551, 611, 603, 613, 615, 621

e.   Convert units of measurement within the metric system and convert units of measurement within the customary system.
528A–528B, 528–531, 536A–536B, 536–539

Objective 2
Determine measurements using appropriate tools and formulas.

a.   Measure length to the nearest 1/8 of an inch and to the nearest centimeter.
532A–532B, 532–533

b.   Measure *volume* and weight using *metric* and *customary* units.
592J, 610A–610B, 610–613, 620A–620B, 620–621, 622A–622B, 622–623

c.   Measure angles using a protractor.
332A–332B, 332–335

d.   Calculate *elapsed time* within a.m. or p.m. time periods.
564A–564B, 564–567

e.   Read and record the temperature to the nearest degree (above and below zero) when using a thermometer with a Celsius or Fahrenheit scale.
568A–568B, 568–569

f.   Calculate the *perimeter* of rectangles and triangles.
540A–540B, 540–541

g.   Calculate the *area* of squares and rectangles using a formula.
550A–550B, 550–551

Standard V
Students will collect, analyze, and draw conclusions from data and apply basic concepts of probability.

Objective 1
Formulate and answer questions using statistical methods to compare data.

a.   Formulate a question that can be answered by collecting data.
260A–260B, 260–261, 269

b.   Collect, compare, and display data using an appropriate format (i.e., *line plots*, bar graphs, *pictographs*, circle graphs, line graphs).
260A–260B, 260–261, 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

c.   Identify *minimum* and *maximum* values for a set of data.
270A–270B, 270–273, 282A–282B, 282–285

d.   Identify or calculate the *mean, mode*, and *range*.
270A–270B, 270–273, 282A–282B, 282–285

e.   Propose and justify inferences based on data.
260A–260B, 260–261, 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

Objective 2
Apply basic concepts of probability.

a.   Describe the results of investigations involving random outcomes using a variety of notations (e.g., 4 out of 9, 4/9, 4:9).
302A–302B, 302–304

b.   Recognize that outcomes of experiments and samples are fractions between 0 and 1.
302A–302B, 302–304

c.   Predict the probability of an outcome in a simple experiment.
Related content:
300A–300B, 300–301, 302A–302B, 302–304