

A Correlation of



to the

**South Carolina
Academic Standards
For Mathematics**

Grades K-6



T/M-165A

enVision™ Correlation Introduction

This correlation shows the close alignment between **Scott Foresman – Addison Wesley enVisionMATH** and the *South Carolina Academic Standards for Mathematics*. Correlation page references are to the Teacher's Edition. Lessons in the Teacher's Editions contain facsimile Student Edition pages.

The enVisionMATH™ program is based around scientific research on how children learn mathematics as well as on classroom-based evidence that validates proven reliability.

Personalized Curriculum

enVisionMATH™ provides 20 (16 in Kindergarten) focused topics that are coherent, digestible groups of lessons focusing on one or a few related content areas. A flexible sequence of topics is small enough for a district to rearrange into a personalized curriculum that matches the sequence preferred by the district. The curriculum is designed so that all standards can be taught before the major mathematics testing.

Instructional Design

enVisionMATH™ teaches for deep conceptual understanding using research-based best practices. Essential understandings connected by Big Ideas are explicitly stated in the Teacher's Edition. Daily Spiral Review and the Problem of the Day focus foundational skills and allow for ongoing practice with a variety of problem types. Daily interactive concept development encourages students to interact with teachers and other students to develop conceptual understanding.

Visual Learning allows students to benefit from seeing math ideas portrayed pictorially as well as being able to see connections between ideas. enVisionMATH™ created a Visual Learning Bridge which is a step-by-step bridge between the interactive learning activity and the lesson exercises to help students focus on one idea at a time and see the connections within the sequence of ideas. The strong sequential visual/verbal connections deepen conceptual understanding for students of all learning modalities and are particularly effective with English language learners and struggling readers. Guiding questions in blue type help the teacher guide students through the examples, ask probing questions to stimulate higher order thinking, and allow for checking of understanding.

Differentiated Instruction

enVisionMATH™ engages and interests all students with leveled activities for ongoing differentiated instruction. A Teacher-Directed Intervention activity at the end of every lesson provides immediate opportunities to get students on track. In addition, ready made leveled learning centers for each lesson allow different students to do the same activity at different levels at the same time giving the teacher uninterrupted time to focus on reteaching students who require intervention. All centers can be used repeatedly due to the inclusion of a "Try Again" at the end. They can also be used for ongoing review and they can be used year after year. Topic-specific considerations for EL, Special Education, At-Risk, and Advanced students enable the teacher to accommodate the diverse learners in the classroom.

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**Scott Foresman – Addison Wesley enVisionMATH
to the
South Carolina Academic Standards for Mathematics
Kindergarten**

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard K-1:The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for kindergarten through grade two, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

- K-1.1 Apply substantive mathematical problem-solving strategies.**
SE/TE: 11–12, 27–28, 95–96, 109–110, 131–132, 147–148, 161–162, 171–172, 189–190, 207–208
- K-1.2 Generate conjectures and exchange mathematical ideas.**
SE/TE: 43–44, 161–162, 171–172
- K-1.3 Explain and justify answers to simple problems.**
SE/TE: 253–254, 255–256, 265–266
122, 164, 222, 258
- K-1.4 Analyze patterns by reasoning systematically.**
SE/TE: 41–42, 43–44, 45–46, 231–232
33–34, 35–36, 37–38, 39–40
- K-1.5 Generalize mathematical concepts.**
SE/TE: 3–4, 5–6, 7–8, 9–10, 11–12, 39–40, 41–42, 45–46, 115–116, 125–126, 127–128, 129–130, 131–132, 221–222, 265–266, 281–282, 283–284, 289–290, 291–292, 293–294, 295–296, 297–298, 299–300, 301–302
289–290
TE: 292A

- K-1.6 Use a variety of forms of mathematical communication.**
SE/TE: 27–28, 69–70, 95–96, 109–110, 131–132, 141–142, 147–148, 189–190, 207–208, 247–248, 283–284, 301–302
- K-1.7 Generalize connections among mathematics, the environment, and other subjects.**
SE/TE: 17–18, 19–20, 21–22, 23–24, 27–28, 35, 263–264, 265–266, 271–272, 281–282, 283–284
255–256, 257–258
- K-1.8 Use multiple informal representations to convey mathematical ideas.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 3–4, 7–8, 9–10, 11–12, 17–18, 19–20, 21–22, 23–24, 25–26, 27–28, 45–46, 96, 115–116, 117–118, 123–124, 125–126, 127–128, 129–130, 131–132, 137–138, 139–140, 141–142, 153–154, 197–198, 255–256, 257–258, 265–266, 289–290, 295–296, 297–298

NUMBER AND OPERATIONS

Standard K-2: The student will demonstrate through the mathematical processes an emerging sense of quantity and numeral relationships, sets, and place values.

Indicators

- K-2.1 Recall numbers, counting forward through 99 and backward from 10.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 53–54, 55–56, 57–58, 59–60, 69–70, 75–76, 79–80, 81–82, 85–86, 87–88, 93–94, 101–102, 103–104, 105–106, 107–108, 109–110, 213–214, 215–216, 217–218, 219–220, 221–222, 223–224, 225–226, 227–228, 229–230, 231–232, 259–260, 261–262, 277–278, 301–302
- K-2.2 Translate between numeral and quantity through 31.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 51–52, 55–56, 59–60, 63–64, 67–68, 75–76, 79–80, 83–84, 87–88, 91–92, 101–102, 107–108, 165–166, 171–172, 179–180, 183–184, 187–188, 195–196, 199–200, 201–202, 203–204, 207–208, 213–214, 217–218, 221–222, 277–278, 289–290, 293–294, 297–298, 301–302
- K-2.3 Compare sets of no more than 31 objects by using the terms more than, less than, and the same as.**
SE/TE: 63–64, 65–66, 67–68, 101–102, 103–104, 105–106, 107–108, 199–200, 289–290, 291–292, 293–294, 295–296, 297–298, 299–300, 301–302
139–140, 245–246

- K-2.4 Represent simple joining and separating situations through 10.**
SE/TE: 61–62, 65–66, 67–68, 69–70, 77–78, 83–84, 89–90, 107–108, 109–110, 177–178, 179–180, 181–182, 183–184, 185–186, 187–188, 189–190, 195–196, 197–198, 201–202, 203–204, 205–206, 207–208
199–200
- K-2.5 Understand that addition results in increase and subtraction results in decrease.**
SE/TE: 177–178, 179–180, 181–182, 183–184, 185–186, 187–188, 189–190, 195–196, 197–198, 201–202, 203–204, 205–206, 207–208
65–66, 67–68, 107–108
TE: 210B
- K-2.6 Analyze the magnitude of digits through 99 on the basis of their place values.**
SE/TE: 223–224, 225–226, 227–228
TE: 234D
- K-2.7 Represent the place value of each digit in a two-digit whole number.**
SE/TE: 213–214, 215–216, 217–218, 219–220, 223–224, 225–226, 227–228
TE: 234D
- K-2.8 Identify ordinal positions through 31st.**
SE/TE: 143–144, 145–146, 147–148
257–258, 274
TE: 286B

ALGEBRA

Standard K-3: The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes.

Indicators

- K-3.1 Identify simple growing patterns.**
SE/TE: 33–34, 35–36, 37–38, 39–40, 41–42, 43–44, 45–46, 223–224, 227–228, 231–232
93–94
- K-3.2 Analyze simple repeating and growing relationships to extend patterns.**
SE/TE: 33–34, 35–36, 37–38, 39–40, 41–42, 43–44, 45–46, 225–226, 229–230, 231–232

K-3.3 Translate simple repeating and growing patterns into rules.**SE/TE: 39–40, 41–42, 43–44**

33–34, 35–36, 37–38, 45–46

TE: 48B**K-3.4 Classify objects according to one or more attributes such as color, size, shape, and thickness.****SE/TE: 3–4, 5–6, 7–8, 9–10, 11–12, 115–116, 125–126, 127–128, 153–154,****163–164, 243–244, 281–282****GEOMETRY**

Standard K-4: The student will demonstrate through the mathematical processes an emerging sense of two- and three-dimensional geometric shapes and relative positions in space.

Indicators**K-4.1 Identify the two-dimensional shapes square, circle, triangle, and rectangle and the three-dimensional shapes cube, sphere, and cylinder.****SE/TE: 115–116, 117–118, 119–120, 121–122, 123–124, 125–126, 127–128, 129–130, 131–132**

3–4, 5–6, 7–8, 9–10, 11–12, 37–38, 39–40, 45–46, 137–138, 139–140, 141–142, 153–154, 295–296, 297–298, 299–300

K-4.2 Represent two-dimensional geometric shapes.**SE/TE: 115–116, 117–118, 119–120, 121–122, 123–124, 129–130, 131–132**
127–128, 137–138, 139–140, 141–142**K-4.3 Use the positional words near, far, below, above, beside, next to, across from, and between to describe the location of an object.****SE/TE: 17–18, 19–20, 21–22, 23–24, 27–28**

25–26, 127–128

TE: 30B**K-4.4 Use the directional words left and right to describe movement.****SE/TE: 25–26, 27–28****TE: 25A, 26A, 26C**

28A, 28C

MEASUREMENT

Standard K-5: The student will demonstrate through the mathematical processes an emerging sense of coin values and the measurement concepts of length, weight, time, and temperature.

Indicators

- K-5.1 Identify a penny, a nickel, a dime, a quarter, and a dollar and the value of each.**
SE/TE: 237–238, 239–240, 241–242, 243–244, 245–246, 247–248
- K-5.2 Compare the lengths of two objects, both directly and indirectly, to order objects according to length.**
SE/TE: 155–156, 157–158, 161–162
- K-5.3 Use nonstandard units to explore the measurement concepts of length and weight.**
SE/TE: 155–156, 157, 159–160, 165–166, 167, 169–170, 171–172
- K-5.4 Identify rulers, yardsticks, and tape measures as devices used to measure length; scales and balances as devices used to measure weight; calendars and analog and digital clocks as devices used to measure time; and digital and standard thermometers as devices used to measure temperature.**
SE/TE: 167–168, 169–170, 171–172, 253–254, 259–260, 261–262, 263–264, 277–278, 279–280, 281–282, 283–284
255–256, 257–258, 265–266
TE: 174B, 268B, 286B
- K-5.5 Understand which measure—length, weight, time, or temperature—is appropriate for a given situation.**
SE/TE: 155–156, 157–158, 159–160, 161–162, 163–164, 167–168, 169–170, 171–172, 253–254
TE: 286B
- K-5.6 Use analog and digital clocks to tell time to the hour.**
SE/TE: 261–262
259–260, 263–264
TE: 268B
- K-5.7 Use a calendar to identify dates, days of the week, and months of the year.**
SE/TE: 271–272, 273–274, 275–276, 277–278, 279–280

K-5.8 Recall equivalencies associated with time: 7 days = 1 week and 12 months = 1 year.

**SE/TE: 271–272, 273–274, 275–276
277–278, 279–280**

DATA ANALYSIS AND PROBABILITY

Standard K-6: The student will demonstrate through the mathematical processes an emerging sense of organizing and interpret data.

Indicators

K-6.1 Organize data in graphic displays in the form of drawings and pictures.

SE/TE: 95–96, 289–290, 291–292, 293–294, 295–296, 297–298, 301–302

K-6.2 Interpret data in graphic displays in the form of drawings and pictures.

SE/TE: 95–96, 289–290, 291–292, 293–294, 295–296, 297–298, 301–302

**Scott Foresman – Addison Wesley enVisionMATH
to the
South Carolina Academic Standards for Mathematics**

Grade One

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 1-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for kindergarten through grade two, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

1-1.1 Apply substantive mathematical problem-solving strategies.

SE/TE: 23–25, 43–46, 75–78, 111–114, 135–137, 163–166, 187–189, 223–225, 295–298, 323–326, 359–362, 387–389, 473–476, 493–496, 509–511, 533–536, 601–604, 637–639

1-1.2 Generate conjectures and exchange mathematical ideas.

SE/TE: 195, 207, 223, 311, 387, 399–402, 407–410, 411–414, 419–422, 423–426, 427–430, 431–434, 435–438, 439–442, 443–446, 465–468, 561, 573–576, 577–580
247–250, 251–254, 347–350, 553

1-1.3 Explain and justify answers to simple problems.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 4, 32, 68, 76, 88, 108, 120, 144, 156–158, 180, 196, 204, 228, 252, 304, 316, 340, 356, 368, 402, 420, 440, 490, 510, 522, 542, 586, 590, 597–600, 622–623

1-1.4 Analyze patterns by reasoning systematically.

SE/TE: 205, 213, 229, 233, 243–246, 247–250, 251–254, 255–258, 275–278, 279–282, 283–286, 291–294, 295–298, 343–346, 351–352
15–18, 19–22, 335–338, 509–511, 625–628

- 1-1.5 Generalize mathematical concepts.**
SE/TE: 195, 200–202, 243, 247–250, 251
- 1-1.6 Use a variety of forms of mathematical communication.**
SE/TE: 43–46, 75–77, 135–138, 163–166, 187–189, 223–226, 323–326, 473–476, 509–511, 533–536, 569–572, 601–604
- 1-1.7 Generalize connections among mathematics, the environment, and other subjects.**
SE/TE: 195–198, 227–230, 443–446, 465–468
453–456, 457–460, 461–464, 469–472, 473–476
- 1-1.8 Use multiple informal representations to convey mathematical ideas.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 10, 14, 42, 51–54, 55–58, 59–62, 83–86, 87–90, 91–94, 227–230, 231–234, 243, 251, 255–258, 287–290, 395–398, 419–422, 423–426, 427–430, 431–434, 435–438, 439–442, 443–446, 573–576, 577–580, 585–588, 589–592, 593–596, 597–600, 601–604

NUMBER AND OPERATIONS

Standard 1-2: The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationships among addition, subtraction, and related basic facts; and the connections among numeric, oral, and written-word forms of whole numbers.

Indicators

- 1-2.1 Translate between numeral and quantity through 100.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 7–10, 35–38, 51–54, 75–78, 87–90, 111–114, 123–126, 131–134, 147–150, 155–158, 179–182, 267–270, 287–290, 307–310, 315–318, 323–326, 335–338, 399–402, 407–410, 415–418, 481–484, 489–492, 501–504, 521–524, 533–536, 545–548, 557–560, 565–568, 609–612, 633–636
- 1-2.2 Use estimation to determine the approximate number of objects in a set of 20 to 100 objects.**
SE/TE: 311
399–402, 403–406, 407–410, 411–414, 419
TE: 328B

- 1-2.3 Represent quantities in word form through ten.**
SE/TE: 6
4–5, 8–9
TE: 28B
- 1-2.4 Recognize whole-number words that correspond to numerals through twenty.**
SE/TE: 264–265, 268–269
11–14, 272–273, 287–290
- 1-2.5 Compare whole-number quantities through 100 by using the terms is greater than, is less than, and is equal to.**
SE/TE: 31–34, 35–38, 39–42, 43–46, 339–342, 347–350, 355–358, 359–362
123–126, 267–270, 331–334, 335–338, 419–422
- 1-2.6 Recall basic addition facts through $9 + 9$ and corresponding subtraction facts.**
SE/TE: 143–146, 147–150, 151–154, 155–158, 159–162, 163–166, 175–178, 179–182, 183–186, 187–190, 481–484, 485–488, 489–492, 493–496, 497–500, 501–504, 505–508, 509–512, 517–520, 521–524, 525–528, 529–532, 533–536
51–54, 59–62, 67–70, 75–78, 107–110, 127–130, 609–612
- 1-2.7 Summarize the inverse relationship between addition and subtraction.**
SE/TE: 107–110, 175–178, 179–182, 183–186, 517–520, 521–524, 525–528, 529–532
- 1-2.8 Generate strategies to add and subtract without regrouping through two-digit numbers.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 51–54, 59–62, 67–70, 71–74, 83–86, 91–94, 99–102, 103–106, 107–110, 135–138, 147–150, 155–158, 163–166, 175–178, 183–186, 319–322, 331–334, 335–338, 481–484, 489–492, 497–500, 501–504, 517–520, 521–524, 525–528, 533–536, 609–612, 617–620, 625–628, 633–636
- 1-2.9 Analyze the magnitude of digits through 999 on the basis of their place values.**
SE/TE: 303–306, 307–310, 311–314, 315–318, 319–322, 323–326, 339–342, 347–350, 355–358, 609–612, 617–620, 621–624, 625–628, 629–632
263–266, 267–270, 271–274, 275–278, 331–334, 335–338, 351–354, 359–362, 613–616, 633–636
TE: 364D

ALGEBRA

Standard 1-3: The student will demonstrate through the mathematical processes a sense of numeric patterns, the relationship between addition and subtraction, and change over time.

Indicators

- 1-3.1 Analyze numeric patterns in addition and subtraction to develop strategies for acquiring basic facts.**
SE/TE: 143–146, 147–150, 151–154, 481–484, 485–488, 489–492, 497–500, 501–504
20–21, 279–282, 296–298, 505–508
- 1-3.2 Translate patterns into rules for simple addition and subtraction.**
SE/TE: 143–146, 147–150, 151–154, 155–158, 159–162
291–294, 295–298, 481–484, 485–488, 489–492, 497–500, 501–504, 509–511
TE: 168B
- 1-3.3 Illustrate the commutative property based on basic facts.**
SE/TE: 71–74
67–70, 75–78, 163–166, 505–508, 509–512
- 1-3.4 Analyze numeric relationships to complete and extend simple patterns.**
SE/TE: 272–274, 275–278, 279–282, 291–294, 295–298, 307–310, 343–346, 357
17, 455, 459, 463, 613–616, 617–620, 625–628
- 1-3.5 Classify a number as odd or even.**
SE/TE: 283–286
275–278
TE: 261B, 283A, 286B, 287A
- 1-3.6 Classify change over time as quantitative or qualitative.**
TE: 582C

GEOMETRY

Standard 1-4: The student will demonstrate through the mathematical processes a sense of two- and three-dimensional geometric shapes, symmetry, and relative positions and directions in space.

Indicators

1-4.1 Identify the three-dimensional geometric shapes prism, pyramid, and cone.

SE/TE: 227–230, 231–234, 235–238

553–556

TE: 240D

1-4.2 Analyze the two-dimensional shapes circle, square, triangle, and rectangle.

SE/TE: 195–198, 199–202, 203–206, 207–210, 211–214, 215–218, 219–222, 223–226

248–249, 251–254, 255–258, 415–418, 585–588, 589–592

1-4.3 Classify two-dimensional shapes as polygons or nonpolygons.

SE/TE: 195–198, 199–202

TE: 240D

1-4.4 Identify a line of symmetry.

SE/TE: 219–222

585–588, 589–592

TE: 193C–193D, 222B

193B, 219A

1-4.5 Use the positional and directional terms *north*, *south*, *east*, and *west* to describe location and movement.

SE/TE: 553–556

TE: 240D

MEASUREMENT

Standard 1-5: The student will demonstrate through the mathematical processes a sense of the value of combinations of coins and the measurement of length, weight, time, and temperature.

Indicators

- 1-5.1 Use a counting procedure to determine the value of a collection of pennies, nickels, dimes, and quarters totaling less than a dollar.**
SE/TE: 367–370, 371–374, 375–378, 379–382, 383–386, 387–390
- 1-5.2 Represent a nickel, a dime, a quarter, a half-dollar, and a dollar in combinations of coins.**
SE/TE: 367–370, 371–374, 375–378, 379–382, 383–386, 390
- 1-5.3 Represent money by using the cent and dollar notations.**
SE/TE: 367, 371, 379, 383–386, 387–390
- 1-5.4 Use whole-inch units to measure the length of an object.**
SE/TE: 407–410, 415–418
- 1-5.5 Generate common referents for whole inches.**
SE/TE: 407–410
- 1-5.6 Use common referents to make estimates in whole inches.**
SE/TE: 407–410
403–406
TE: 402B, 406B, 410B
- 1-5.7 Use nonstandard units to measure the weight of objects.**
SE/TE: 431–434, 435–438, 439–442
TE: 450A
- 1-5.8 Use analog and digital clocks to tell and record time to the half hour.**
SE/TE: 453–456, 457–460, 461–464, 474
465–468
- 1-5.9 Illustrate past and future dates on a calendar.**
SE/TE: 469–472
TE: 472B
- 1-5.10 Represent dates in standard form (June 1, 2007, for example) and numeric form (6-1-2007, for example).**
SE/TE: 469–472
TE: 478B
472B

1-5.11 Use Celsius and Fahrenheit thermometers to measure temperature.**SE/TE: 443–446****TE: 450B**

446B

Data Analysis and Probability

Standard 1-6: The student will demonstrate through the mathematical processes a sense of collecting, organizing, and interpreting data and of making predictions on the basis of data.

Indicators**1-6.1 Use survey questions to collect data.****SE/TE: 557–560, 561–564, 565–568, 569–572****1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables.****SE/TE: 135–137, 323–326, 509–511, 541, 545, 557–560, 561–564, 565–568, 569–572**

223–225, 473, 476, 549–552

1-6.3 Interpret data in picture graphs, object graphs, bar graphs, and tables by using the comparative terms *more*, *less*, *greater*, *fewer*, *greater than*, and *less than*.**SE/TE: 541–544, 545–548, 549–552, 558–560, 561–564, 565–568, 569–572**

473–476, 577–580

1-6.4 Predict on the basis of data whether events are *likely* or *unlikely* to occur.**SE/TE: 573–576, 577–580****TE: 539F, 580B**

539B, 539C, 576B, 577A

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Grade Two

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 2-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for kindergarten through grade two, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

2-1.1 Apply substantive mathematical problem-solving strategies.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 7–10, 27–30, 47–50, 75–78, 135–137, 150, 174, 198, 222, 275–278, 286, 303–306, 343–346, 358, 368–370, 382, 400–402, 407–410, 418, 438, 442, 463–466, 471–474, 491–494, 517–518, 538, 542, 555–558, 594, 627–630

2-1.2 Generate conjectures and exchange mathematical ideas.

SE/TE: 339, 343, 391, 395, 399, 403, 407, 415, 419, 423, 427, 431, 435, 439, 443

52, 451, 455, 459, 463–466, 467, 471, 479, 503

2-1.3 Explain and justify answers to simple problems.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 4, 23–26, 40, 72, 94, 100, 163–165, 172, 186, 196, 211–214, 220, 243–245, 252, 286, 310, 315–318, 352, 380, 416–418, 452, 456–458, 480–482, 504, 516–518, 540–542, 552, 592, 620, 624–626

2-1.4 Analyze patterns by reasoning systematically.

SE/TE: 23–26, 127–130, 131–134, 135–137, 171–174, 176–177, 187–190, 195–198, 207–210, 511–514, 515–518, 527–530, 531–534, 543–546, 635–638
35–38, 39–42, 43–46, 47–50, 55–58, 59–62, 71–74, 75–78, 79–82, 83–86, 87–90, 91–94

- 2-1.5 Generalize mathematical concepts.**
SE/TE: 315–318, 319–322, 323–326, 331–334, 335–338
52
- 2-1.6 Use a variety of forms of mathematical communication.**
SE/TE: 63–66, 135–137, 163–165, 243–245, 471–474, 583–586, 611–614
- 2-1.7 Generalize connections among mathematics, the environment, and other subjects.**
SE/TE: 315–318, 379–382, 383–386, 387–390, 391–394, 395–398, 415–418, 419–422, 423–426, 427–430, 431–434, 435–438, 439–442, 443–446, 483–486, 487–490
- 2-1.8 Use multiple informal representations to convey mathematical ideas.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 3–6, 27–30, 55–58, 59–62, 75–78, 99–102, 132–133, 143–146, 155–158, 171, 183–186, 195–198, 203–206, 219–222, 231–234, 251–254, 263–266, 291–294, 351–354, 371–374, 403–406, 483–486, 511–514, 523–526, 532–533, 552–553, 591–594, 611–614, 620–622, 632–633

NUMBER AND OPERATIONS

Standard 2-2: The student will demonstrate through the mathematical processes an understanding of the base-ten numeration system; place values; and accurate, efficient, and generalizable methods of adding and subtracting whole numbers.

Indicators

- 2-2.1 Generate estimation strategies to determine the approximate number of objects in a set of no more than 1,000 objects.**
SE/TE: 503
501
TE: 548B
- 2-2.2 Represent quantities in word form through *twenty*.**
SE/TE: 107–110, 519–522
TE: 140D
- 2-2.3 Represent multiples of ten in word form through *ninety*.**
SE/TE: 107–110, 519–522
TE: 140D

- 2-2.4 Compare whole-number quantities through 999 by using the terms *is less than*, *is greater than*, and *is equal to* and the symbols $<$, $>$, and $=$.**
SE/TE: 111–114, 115–118, 119–122, 123–126, 287–290, 299–302, 531–534, 535–538, 539–542, 555–558, 571–574
307–310
- 2-2.5 Interpret models of equal grouping (multiplication) as repeated addition and arrays.**
SE/TE: 104–105, 591–594, 595–598, 599–602, 603–606, 607–610, 631–634
102
- 2-2.6 Interpret models of sharing equally (division) in as repeated subtraction and arrays.**
SE/TE: 619–622, 623–626, 627–630, 631–634
- 2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 3–6, 19–22, 27–29, 35–38, 51–54, 59–62, 71–74, 87–90, 171–174, 183–186, 195–198, 203–206, 211–214, 219–222, 227–230, 235–238, 243–246, 251–254, 259–262, 267–270, 271–274, 275–278, 283–286, 291–294, 303–306, 523–526, 551–554, 559–562, 567–570, 575–578
- 2-2.8 Generate addition and subtraction strategies to find missing addends and subtrahends in number combinations through 20.**
SE/TE: 7–10, 11–14, 15–18, 19–22, 23–26, 27–29, 37, 39–42, 47–50, 61, 73, 75–77, 87–90, 91–94, 199–202, 221, 567–570
5, 205, 209, 229, 237, 241, 257, 261, 553, 577, 597, 605
- 2-2.9 Generate strategies to round numbers through 90 to the nearest 10.**
TE: 312B
- 2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 99–102, 111–114, 123–126, 171–174, 179–182, 195–198, 207–210, 219–222, 227–230, 231–234, 239–242, 243–245, 251–254, 259–262, 263–266, 267–270, 271–274, 275–278, 283–286, 511–514, 515–518, 523–526, 551–554, 555–558, 559–562, 563–566, 567–570, 571–574, 575–578, 579–582

ALGEBRA

Standard 2-3: The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.

Indicators

2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.

SE/TE: 127–130, 131–134, 143–146, 147–150, 151–154, 155–158, 159–162, 163–165, 171–174, 195–198, 199–202, 523–526, 527–530, 551–554, 567–570

2-3.2 Translate patterns into rules for simple multiples.

SE/TE: 187–190, 525, 543–546, 635–638

2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.

**SE/TE: 187–190, 511–514, 527–530, 537, 543–546, 635–638
225, 361, 365, 369, 453**

2-3.4 Identify quantitative and qualitative change over time.

SE/TE: 583–586

TE: 588B

2-3.5 Analyze quantitative and qualitative change over time.

SE/TE: 583–586

TE: 588B

GEOMETRY

Standard 2-4: The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes.

Indicators

2-4.1 Analyze the three-dimensional shapes spheres, cubes, cylinders, prisms, pyramids, and cones according to the number and shape of the faces, edges, corners, and bases of each.

SE/TE: 315–318, 319–322, 343–346

2-4.2 Identify multiple lines of symmetry.

SE/TE: 339–342

2-4.3 Predict the results of combining and subdividing polygons and circles.

SE/TE: 323–326, 327–330, 339–342, 351–354, 359–362, 363–366, 374

MEASUREMENT

Standard 2-5: The student will demonstrate through the mathematical processes an understanding of the value of combinations of coins and bills and the measurement of length, weight, time, and temperature.

Indicators

- 2-5.1 Use a counting procedure to determine the value of a collection of coins and bills.**
SE/TE: 143–146, 147–150, 151–154, 155–158, 159–162, 163–166
- 2-5.2 Use coins to make change up to one dollar.**
SE/TE: 295–298, 299–302
TE: 168B
- 2-5.3 Use appropriate tools to measure objects to the nearest whole unit: measuring length in centimeters, feet, and yards; measuring liquid volume in cups, quarts, and gallons; measuring weight in ounces and pounds; and measuring temperature on Celsius and Fahrenheit thermometers.**
SE/TE: 379–382, 383–386, 387–390, 391–394, 395–398, 399–402, 415–418, 419–422, 423–426, 427–430, 431–434, 435–438, 439–442, 443–446, 467–470
TE: 448B
- 2-5.4 Generate common measurement referents for feet, yards, and centimeters.**
SE/TE: 391–394, 395–398
- 2-5.5 Use common measurement referents to make estimates in feet, yards, and centimeters.**
SE/TE: 391–394, 395–398
TE: 412B
- 2-5.6 Predict whether the measurement will be greater or smaller when different units are used to measure the same object.**
SE/TE: 387–390, 435–438, 439–442
- 2-5.7 Use analog and digital clocks to tell and record time to the nearest quarter hour and to the nearest five-minute interval.**
SE/TE: 451–454, 455–458, 459–462
- 2-5.8 Match *a.m.* and *p.m.* to familiar situations.**
TE: 476B
- 2-5.9 Recall equivalencies associated with length and time: 12 inches = 1 foot, 3 feet = 1 yard, 60 minutes = 1 hour, and 24 hours = 1 day.**
SE/TE: 391, 451, 455–458, 459

DATA ANALYSIS AND PROBABILITY

Standard 2-6: The student will demonstrate through the mathematical processes an understanding of creating questions to collect data, organizing data, describing trends of a data set, and making predictions based on data.

Indicators

2-6.1 Create survey questions to collect data.

SE/TE: 479, 483, 487

504

2-6.2 Organize data in charts, pictographs, and tables.

SE/TE: 163–165, 463–466, 479–482, 483–486, 487–490, 491–494, 499–502, 503–506, 583–586, 635–638

2-6.3 Infer trends in a data set as increasing, decreasing, or random.

SE/TE: 479–482, 483–486, 487–490, 503–505, 583–586

TE: 508D

2-6.4 Predict on the basis of data whether events are *more likely* or *less likely* to occur.

SE/TE: 495–498, 499–502

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Grade Three

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 3-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for grades three through five, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

3-1.1 Analyze information to solve increasingly more sophisticated problems.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 19–21, 58–59, 69–71, 99–100, 110–113, 132–133, 154–156, 167–169, 174–176, 196–199, 212–215, 218–221, 224–226, 246–247, 268–269, 298–299, 312–315, 320–321, 334–337, 360–361, 374–375, 404–405, 412–413, 441–443, 458–459, 460–463, 464–465, 466–467, 468–471, 472–475

3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.

SE/TE: 32–33, 111, 131, 143, 165, 368–369, 370–371, 372–373, 418

3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.

SE/TE: 23, 49, 54, 78–79, 89, 95, 110, 130–131, 152–153, 194–195, 292, 296–297, 379, 380–382, 403, 412–413, 425, 477
146

3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.

SE/TE: 24–25, 245, 249, 251, 252–253, 264–265, 266–267, 269, 280–281, 282–283, 284–286, 288–289, 298–299, 339, 341, 405

3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 10, 22–23, 32, 50–52, 68–71, 98–100, 111–112, 126–127, 141, 150–151, 172–173, 184–185, 196–197, 224–226, 238, 260–262, 276, 294–295, 316–318, 328, 352–354, 368–369, 376–377, 384, 392, 396–397, 412–413, 440–442, 460–463, 482–483

3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.

SE/TE: 24–25, 44–47, 58–59, 88–89, 98–101, 121, 174–177, 199, 218–221, 224–227, 234–237, 238–241, 242–243, 298–299, 360–361, 376–377, 378–379, 380–383, 384–385, 392–394, 398–399, 402–403, 404–405, 436–437, 438–439, 144, 150

3-1.7 Use flexibility in mathematical representations.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 4–5, 34–35, 50–53, 68–69, 86–87, 108–109, 118–121, 144–146, 154–157, 165, 170–171, 184–185, 216–217, 234–237, 244–245, 252–253, 268–269, 276–277, 282–283, 294–295, 316–318, 342–343, 368–369, 372–373, 380–383, 395, 412–413, 426–429, 440–443, 458–459

3-1.8 Recognize the limitations of various forms of mathematical representations.

**SE/TE: 478, 483
58–59
TE: 487G**

NUMBER AND OPERATIONS

Standard 3-2: The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts.

Indicators**3-2.1 Compare whole-number quantities through 999,999 by using the terms *is less than, is greater than, and is equal to* and the symbols $<$, $>$, and $=$.**

**SE/TE: 9, 11, 12–14, 16–17, 20, 35, 43, 124, 177, 188–189, 193, 195, 222–223, 226, 253, 288–289, 311, 315, 319, 320–321, 337, 374–375, 437, 481, 49, 55, 57, 70, 283, 286–287, 414–415, 417, 424
TE: 29A**

- 3-2.2 Represent in word form whole numbers through *nine hundred ninety-nine thousand*.**
SE/TE: 4–5, 7, 8–9, 10–11, 276–277
38
- 3-2.3 Apply an algorithm to add and subtract whole numbers fluently.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 32–33, 36–39, 44–47, 48–49, 50–53, 54–55, 56–57, 66–67, 72–73, 74–76, 78–79, 86–87, 90–91, 92–94, 96–97, 132–133, 156, 174–177, 196–199, 210–211, 224–227, 267, 312–314, 316–319, 320–321, 368–369, 374–375, 400–401, 426–429, 448–451
- 3-2.4 Apply procedures to round any whole number to the nearest 10, 100, or 1,000.**
SE/TE: 40–42, 45, 58–59, 74–76, 378–379
35, 146, 177, 191, 214, 223, 403, 419, 421, 424, 428, 450–451
TE: 63A
- 3-2.5 Understand fractions as parts of a whole.**
SE/TE: 276–277, 278–279, 280–281, 282–283, 284–287, 288–289, 290–293, 294–295, 296–297, 306–307, 331
318, 336, 399, 401, 426–429, 443
- 3-2.6 Represent fractions that are greater than or equal to 1.**
SE/TE: 278
290–291
TE: 279A, 295B, 319A–319B
- 3-2.7 Recall basic multiplication facts through 12 x 12 and the corresponding division facts.**
SE/TE: 108–109, 118–120, 126–127, 130–131, 140–141, 150–151, 164–165, 170–171, 184–185, 190–191, 196–199, 208–209, 212–215, 224–227, 316–319, 334–335, 376–377, 398–399, 412–413, 426–429, 440–443, 448–451
TE: 203E
- 3-2.8 Compare the inverse relationship between multiplication and division.**
SE/TE: 184–185, 186–187, 190–191, 192–193, 194–195
- 3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome.**
SE/TE: 122, 208–209, 210–211, 212–215
TE: 137A

- 3-2.10 Generate strategies to multiply whole numbers by using one single-digit factor and one multidigit factor.**
SE/TE: 412–413, 414–415, 416–417, 418–419, 420–421, 422–423
- 3-2.11 Use basic number combinations to compute related multiplication problems that involve multiples of 10.**
SE/TE: 126–127, 412–413, 414, 436–437
- 3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value.**
SE/TE: 4–5, 6–7, 8–9, 12–13, 16–17, 50–53, 54–55, 86–87, 90–91, 92–94, 96–97, 308–310, 312–314, 412–413, 416–417, 418–419, 420–421, 422–423, 429, 440–443, 444–445, 446–447
24–25, 36–38, 44–46, 48–49, 56–57, 77, 211, 253

ALGEBRA

Standard 3-3: The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.

Indicators

- 3-3.1 Create numeric patterns that involve whole-number operations.**
SE/TE: 15, 122, 207, 208–209, 210–211, 213–214
129, 141, 146, 149
- 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.**
SE/TE: 118–121, 150–151, 206–207, 208–209, 210–211, 212–214, 218–221, 360–361
35, 128–129, 293, 298–299, 314, 354, 373, 385, 415, 437
- 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.**
SE/TE: 9, 32–33, 36–39, 43, 48–49, 55, 56–57, 66–67, 70–71, 73, 94–95, 98, 100, 108–109, 111–112, 115, 116, 147, 152–153, 171, 172, 216–217, 222–223, 309–310, 330–331, 425
88–89, 131, 176, 314–315
- 3-3.4 Illustrate situations that show change over time as increasing.**
SE/TE: 404–405, 468–471
397, 399

GEOMETRY

Standard 3-4: The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes.

Indicators

3-4.1 Identify the specific attributes of circles: center, radius, circumference, and diameter.

SE/TE: 277, 278–279, 287, 330, 351

TE: 257A

3-4.2 Classify polygons as either triangles, quadrilaterals, pentagons, hexagons, or octagons according to the number of their sides.

SE/TE: 238–241, 246–247, 250–251, 252–253

260–263, 292, 470

3-4.3 Classify lines and line segments as either parallel, perpendicular, or intersecting.

SE/TE: 242–243, 244–245

470

3-4.4 Classify angles as either right, acute, or obtuse.

SE/TE: 244–245, 248–249

250–251, 252–253, 293, 405

3-4.5 Classify triangles by the length of their sides as either scalene, isosceles, or equilateral and by the size of their angles as either acute, obtuse, or right.

SE/TE: 248–249, 252–253

260–263, 337

3-4.6 Exemplify points, lines, line segments, rays, and angles.

SE/TE: 242–243, 244–245, 246–247, 248–249

252–253

3-4.7 Analyze the results of combining and subdividing circles, triangles, quadrilaterals, pentagons, hexagons, and octagons.

SE/TE: 237, 264–265, 266–267, 268–269, 276–277, 278–279, 280, 282–283,

284–286, 288–289, 290–293, 294–295, 296–297, 306–307, 376–377, 378–379, 384–385

249, 262, 342–343, 397

3-4.8 Predict the results of one transformation—either slide, flip, or turn—of a geometric shape.

SE/TE: 260–263

266–267, 268–269

MEASUREMENT

Standard 3-5: The student will demonstrate through the mathematical processes an understanding of length, time, weight, and liquid volume measurements; the relationships between systems of measure; accurate, efficient, and generalizable methods of determining the perimeters of polygons; and the values and combinations of coins required to make change.

Indicators

- 3-5.1 Use the fewest possible number of coins when making change.**
SE/TE: 18–21, 22–23, 309–311
49, 240, 265, 312, 331, 375
TE: 29A
- 3-5.2 Use appropriate tools to measure objects to the nearest unit: measuring length in meters and half inches; measuring liquid volume in fluid ounces, pints, and liters; and measuring mass in grams.**
SE/TE: 328–331, 332–333, 334–337, 338–339, 340–341, 350–351, 352–353, 356–357, 358–359, 402–403
- 3-5.3 Recognize the relationship between meters and yards, kilometers and miles, liters and quarts, and kilograms and pounds.**
SE/TE: 368–369
330
TE: 365A
- 3-5.4 Use common referents to make comparisons and estimates associated with length, liquid volume, and mass and weight: meters compared to yards, kilometers to miles, liters to quarts, and kilograms to pounds.**
SE/TE: 329–330, 338–339, 340–341, 356–357, 358–359
TE: 365A
- 3-5.5 Generate strategies to determine the perimeters of polygons.**
SE/TE: 368–369, 370–371, 372–373, 374–375, 383
424
- 3-5.6 Use analog and digital clocks to tell time to the nearest minute.**
SE/TE: 392–395, 396–397, 398–399, 400–401, 404–405
245
- 3-5.7 Recall equivalencies associated with time and length: 60 seconds = 1 minute and 36 inches = 1 yard.**
SE/TE: 334–337, 352–355, 398–399
397

DATA ANALYSIS AND PROBABILITY

Standard 3-6: The student will demonstrate through the mathematical processes an understanding of organizing, interpreting, analyzing and making predictions about data, the benefits of multiple representations of a data set, and the basic concepts of probability.

Indicators

- 3-6.1 Apply a procedure to find the range of a data set.**
SE/TE: 470–471
462, 469
- 3-6.2 Organize data in tables, bar graphs, and dot plots.**
SE/TE: 24–25, 77, 215, 287, 298–299, 360–361, 458–459, 464–465, 466–467, 468–471, 476–477, 478–480, 483
47
- 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots.**
SE/TE: 46–47, 76–78, 287, 458–459, 460–463, 464–465, 466–467, 468–471, 475, 478–481, 482–483
9, 17, 23, 55, 66–67, 91, 100, 129, 143, 168–169, 207, 214–215, 223, 226, 279, 283, 307, 311, 314
- 3-6.4 Analyze dot plots and bar graphs to make predictions about populations.**
SE/TE: 458, 460–463, 464–465, 477, 478–481, 482–483
- 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.**
SE/TE: 482–483
298–299
- 3-6.6 Predict on the basis of data whether events are *likely, unlikely, certain, or impossible* to occur.**
SE/TE: 472–475, 476–477, 478–481
- 3-6.7 Understand when the probability of an event is 0 or 1.**
SE/TE: 472–475, 476–477, 478
TE: 487F

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Grade Four

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 4-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for grades three through five, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

4-1.1 Analyze information to solve increasingly more sophisticated problems.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 20–21, 34–35, 39, 68–69, 86–89, 116–119, 134–135, 156–157, 175–177, 186–187, 208–209, 233, 250–253, 254–255, 256–257, 258–261, 278, 290–293, 308–309, 336–339, 356–357, 392–393, 402–403, 404–405, 406–407, 418–419, 420–423, 440–441, 460–461, 476–477

4-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 28–29, 60, 109, 149, 173, 202, 206–207, 208–209, 238–239, 254–255, 278, 318, 324–325, 326–327, 332–333, 334–335, 352–353, 354–355, 432–433, 434–435, 436–437, 438–439, 440–441, 448–449, 450–451, 452–453, 454–455, 458–459, 468–469, 470–471

4-1.3 Explain and justify answers to problems on the basis of mathematical properties, structures, and relationships on mathematical properties, structures, and relationships.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 15, 18, 28–29, 60–61, 62–63, 64–65, 79, 82–83, 84–85, 109, 146–148, 152–153, 154–155, 173, 306–307, 352–353, 354–355, 432–433, 434–435, 436–437, 438–439, 440–441, 448–449, 450–451, 452–453, 454–455, 456–457, 458–459, 468–469, 470–471

4-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.

SE/TE: 134–135, 177, 202–203, 204–205, 208–209, 216, 229, 230–231, 250–253, 254–255, 256–257, 346–347, 413

4-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 9, 16–17, 36, 66–67, 68, 108, 110–113, 130–131, 144–145, 166–167, 184–185, 208–209, 224, 238–240, 270–273, 290–293, 306–307, 320–322, 336–339, 354–355, 368, 380–382, 392, 414–415, 416–417, 418–419, 440, 450–451, 460–461, 470–471

4-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 20–21, 32–33, 36–39, 42–43, 78, 89, 128–129, 186–187, 198–199, 204–205, 268–269, 280–281, 290–293, 306–307, 316–317, 336–339, 356–357, 370–373, 378–379, 380–383, 392–393, 408–409, 410–411, 412–413, 414–415, 416–417, 420–423, 440–441, 460–461, 476–477

4-1.7 Use flexibility in mathematical representations.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 4–7, 44–47, 68–69, 86–87, 116–119, 146–149, 168–169, 184–185, 216–218, 234–235, 238–240, 250–253, 254–255, 268–269, 280–281, 296–298, 307, 316–317, 328–331, 332–333, 334–335, 337–339, 352–353, 356–357, 404–405, 420–423, 438–439, 448–449, 458–459, 470–471

4-1.8 Recognize the limitations of various forms of mathematical representations.

SE/TE: 20–21, 44–45, 86–87, 116–117, 134–135, 156–157, 282–283, 460–461, 476–477

NUMBER AND OPERATIONS

Standard 4-2: The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationship between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals.

Indicators

- 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions.**
SE/TE: 4–6, 8–9, 10–13, 14–15, 219
36–39, 56, 367, 413, 414–415
TE: 25A
- 4-2.2 Apply divisibility rules for 2, 5, and 10.**
SE/TE: 182–183, 184–185, 208, 227
253
TE: 193E
- 4-2.3 Apply an algorithm to multiply whole numbers fluently.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 54–57, 60–61, 62–63, 64–65, 66–67, 96–97, 98–99, 100–101, 102–105, 110–113, 114–115, 142–143, 146–149, 150–151, 154–155, 156–157, 182–183, 184–185, 304–305, 308–309, 318–319, 320–323, 324–325, 326–327, 336–339, 354–355, 373, 375, 379, 380–383
- 4-2.4 Explain the effect on the product when one of the factors is changed.**
SE/TE: 64–65, 66, 113
167
- 4-2.5 Generate strategies to divide whole numbers by single-digit divisors.**
SE/TE: 76–78, 80–81, 82–83, 84–85, 86–89, 164–165, 166–167, 168–169, 170–173, 174–177, 178–179, 180–181, 279, 306–307, 412–413, 414–415
203, 207, 220–221, 330, 385, 436–437
- 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 4–6, 10–13, 14–15, 18–19, 32–33, 40–41, 96–97, 114–115, 142–143, 144–145, 150–151, 152–153, 154–155, 164–165, 166–167, 170–172, 178–179, 180–181, 182–183, 219, 268–269, 270–272, 279, 290–293, 294–295, 296–299, 304–305, 323, 373, 392–393

4-2.7 Compare decimals through hundredths by using the terms *is less than*, *is greater than*, and *is equal to* and the symbols $<$, $>$, and $=$.

SE/TE: 10–13, 17, 270–272, 276–278, 280–281, 298

15, 83, 349

4-2.8 Apply strategies and procedures to find equivalent forms of fractions.

SE/TE: 224–227, 228–229, 230–233, 250–253, 254–255, 256–257, 258–261, 274–275

325, 403

4-2.9 Compare the relative size of fractions to the benchmarks 0, $\frac{1}{2}$, and 1.

SE/TE: 222–223, 234–235, 236–237, 433

4-2.10 Identify common the fraction/decimal equivalents $\frac{1}{2} = .5$, $\frac{1}{4} = .25$, $\frac{3}{4} = .75$,

$\frac{1}{3} \approx .33$, $\frac{2}{3} \approx .67$, multiples of $\frac{1}{10}$, and multiples of $\frac{1}{100}$.

SE/TE: 274–275, 276–278, 280–281

183, 349

4-2.11 Represent improper fractions, mixed numbers, and decimals.

SE/TE: 16–17, 18–19, 216–219, 220–221, 222–223, 224–227, 228–229, 230–232, 234–235, 236–237, 261, 268–269, 270–273, 274–275, 276–278, 280–281, 290–293

4-2.12 Generate strategies to add and subtract decimals through hundredths.

SE/TE: 16–17, 18–19, 294–295, 296–298, 300–302

33, 35, 133, 143, 335, 403

ALGEBRA

Standard 4-3: The student will demonstrate through the mathematical processes an understanding of numeric and nonnumeric patterns, the representation of simple mathematical relationships, and the application of procedures to find the value of an unknown.

Indicators

4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.

SE/TE: 58–59, 66–67, 128–129, 130–131, 132–133, 185, 273, 356–357

422

- 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.**
SE/TE: 130–131, 132–133, 185, 273
- 4-3.3 Use a rule to complete a sequence or a table.**
SE/TE: 58–59, 66–67, 128–129, 130–131, 132–133, 135, 185, 273
207, 209, 221, 237, 240, 275, 293, 317, 435, 437, 459
- 4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations.**
SE/TE: 45–46, 68–69, 86–88, 109, 116–117, 128–129, 130–131, 132–133, 260
115, 153, 155, 169, 172, 322, 388, 434, 437, 438–439
- 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.**
SE/TE: 31, 45–46, 62, 64, 68–69, 79, 80, 83, 84, 86–88, 96, 98, 116–119, 164,
240–241, 303, 331, 414–415, 432–433, 434–435, 436–437, 438–439, 474
108, 169, 171, 179, 221, 305, 322, 388, 422
- 4-3.6 Illustrate situations that show change over time as either increasing, decreasing, or varying.**
SE/TE: 410–411
388

GEOMETRY

Standard 4-4: The student will demonstrate through the mathematical processes an understanding of the relationship between two- and three-dimensional shapes, the use of transformations to determine congruency, and the representation of location and movement within the first quadrant of a coordinate system.

Indicators

- 4-4.1 Analyze the quadrilaterals squares, rectangles, trapezoids, rhombuses, and parallelograms according to their properties.**
SE/TE: 202–203, 206–207, 350–351, 456–457
257, 319, 320–322, 324–325, 328–330
- 4-4.2 Analyze the relationship between three-dimensional geometric shapes in the form of cubes, rectangular prisms, and cylinders and their two-dimensional nets.**
SE/TE: 346–349, 350–351
417

- 4-4.3 Predict the results of multiple transformations of the same type—translation, reflection, or rotation—on a two-dimensional geometric shape.**
SE/TE: 448–449, 450–451, 452–453, 454–455
- 4-4.4 Represent the two-dimensional shapes trapezoids, rhombuses, and parallelograms and the three-dimensional shapes cubes, rectangular prisms, and cylinders.**
SE/TE: 204–205, 206–207, 346–347, 350–351, 352–353, 354–355, 456–457, 458–459, 475
- 4-4.5 Use transformation(s) to prove congruency.**
SE/TE: 455, 452–453, 454–455
- 4-4.6 Represent points, lines, line segments, rays, angles, and polygons.**
SE/TE: 196–197, 198–199, 200–201, 202–203
298, 325
- 4-4.7 Represent with ordered pairs of whole numbers the location of points in the first quadrant of a coordinate grid.**
SE/TE: 408–409, 410–411
- 4-4.8 Illustrate possible paths from one point to another along vertical and horizontal grid lines in the first quadrant of the coordinate plane.**
TE: 429B

MEASUREMENT

Standard 4-5: The student will demonstrate through the mathematical processes an understanding of elapsed time; conversions within the U.S. Customary System; and accurate, efficient, and generalizable methods of determining area.

Indicators

- 4-5.1 Use appropriate tools to measure objects to the nearest unit: measuring length in quarter inches, centimeters, and millimeters; measuring liquid volume in cups, quarts, and liters; and measuring weight and mass in pounds, milligrams, and kilograms.**
SE/TE: 318, 321, 329, 364–365, 366–367, 368–369, 374–375, 376–377, 378–379
- 4-5.2 Compare angle measures with referent angles of 45 degrees, 90 degrees, and 180 degrees to estimate angle measures.**
SE/TE: 200–201
204–205, 209
TE: 213A

- 4-5.3 Use equivalencies to convert units of measure within the U.S. Customary System: converting length in inches, feet, yards, and miles; converting weight in ounces, pounds, and tons; converting liquid volume in cups, pints, quarts, and gallons; and converting time in years, months, weeks, days, hours, minutes, and seconds.**
SE/TE: 370–372, 380–383, 384–385
133, 145, 165, 235, 388, 413, 455
- 4-5.4 Analyze the perimeter of a polygon.**
SE/TE: 328–330, 332–333, 334–335
108, 117, 223, 252, 260, 298, 365, 377, 415
- 4-5.5 Generate strategies to determine the area of rectangles and triangles.**
SE/TE: 146–149, 316–317, 318–319, 320–322, 324–325, 326–327, 332–333, 334–335, 339, 459
151, 153
- 4-5.6 Apply strategies and procedures to determine the amount of elapsed time in hours and minutes within a 12-hour period, either a.m. or p.m.**
SE/TE: 386–389, 392–393
469
- 4-5.7 Use Celsius and Fahrenheit thermometers to determine temperature changes during time intervals.**
SE/TE: 390–391
392–393
- 4-5.8 Recall equivalencies associated with liquid volume, time, weight, and length: 8 liquid ounces = 1 cup, 2 cups = 1 pint, 2 pints = 1 quart, 4 quarts = 1 gallon; 365 days = 1 year, 52 weeks = 1 year; 16 ounces = 1 pound, 2,000 pounds = 1 ton; and 5,280 feet = 1 mile.**
SE/TE: 370–371, 380–383, 384–385
101
- 4-5.9 Exemplify situations in which highly accurate measurements are required.**
SE/TE: 364, 366–367, 368–369, 370–371, 374–375, 376–377, 378–379, 380–383

DATA ANALYSIS AND PROBABILITY

Standard 4-6: The student will demonstrate through the mathematical processes an understanding of the impact of data-collection methods, the appropriate graph for categorical or numerical data, and the analysis of possible outcomes for a simple event.
Indicators

4-6.1 Compare how data-collection methods impact survey results.

SE/TE: 402–403

TE: 429B

4-6.2 Interpret data in tables, line graphs, bar graphs, and double bar graphs whose scale increments are greater than or equal to 1.

SE/TE: 103–104, 176–177, 186–187, 382–383, 388, 402–403, 404–405, 406–407, 410–411, 416–417, 418–419, 423, 433, 435

13, 39, 43, 57, 65, 87–88, 131, 143, 155, 232–233, 240, 295, 309, 338, 369, 372

4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1.

SE/TE: 20–21, 177, 336–338, 406–407, 410–411, 420–423, 476–477

4-6.4 Distinguish between categorical and numerical data.

SE/TE: 418–419

403

TE: 429B

4-6.5 Match categorical and numerical data to appropriate graphs.

SE/TE: 402–403, 404–405, 410–411, 416–417, 418–419, 420–421

4-6.6 Predict on the basis of data whether events are *likely*, *unlikely*, *certain*, *impossible*, or *equally likely* to occur.

SE/TE: 472–474

477

TE: 466B, 466C–466D, 469B, 471B

4-6.7 Analyze possible outcomes for a simple event.

SE/TE: 283, 468–469, 470–471

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**Scott Foresman – Addison Wesley enVisionMATH
to the
South Carolina Academic Standards for Mathematics
Grade Five**

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 5-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for grades three through five, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

- 5-1.1 Analyze information to solve increasingly more sophisticated problems.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 14–17, 34–36, 74–76, 88–89, 110–112, 126–127, 136–137, 158–161, 188–191, 212–213, 237, 246–247, 270–271, 288–289, 310–313, 340–341, 348–349, 361, 366–367, 386–388, 402–403, 404–405, 422–423, 443, 449, 454–455, 478–479, 486–487, 492–493, 494–495
- 5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.**
SE/TE: 200–201, 208, 212–213
205, 210, 306, 308, 312, 315, 329, 388
- 5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.**
SE/TE: 246–247
4–5, 12–13, 24–26, 30, 44–45, 59, 84–85, 87, 136, 138–139, 146–147, 158–161, 176–177, 200, 220, 256, 280, 286–287, 296–297, 322, 356–357, 377, 380–381, 402–403, 414–416, 432, 450, 464–466, 486–487

5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.**SE/TE: 206–207**

208–209, 478–479

TE: 212B, 213B**5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.****SE/TE: 246–247**

12–13, 24–26, 44–45, 60–61, 68–69, 84–85, 125, 138–139, 146–147, 171, 200, 220, 256, 279, 296–297, 322, 332–334, 348–349, 356–357, 377, 396, 402–403, 414–416, 430, 436–437, 464–466, 472–473, 486–487, 488–489

5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.**SE/TE: 30–32, 62–63, 64–67, 68–69, 70–71, 72–73, 84–85, 86–87, 88–89, 90–92, 124–125, 170–171, 172–173, 174–175, 176–177, 178–179, 180–182, 184–185, 186–187, 228–229, 244–245, 278–279, 280–281, 284–285, 286–287, 298–299, 340–341, 494–495****5-1.7 Use flexibility in mathematical representations.***This Indicator is taught throughout the program. For examples, see the following pages:***SE/TE: 34–36, 74–75, 110–111, 139, 162–163, 220–222, 226–227, 242–243, 246–247, 263, 268–269, 286–287, 298–299, 314–315, 326–327, 330–331, 336–339, 354–355, 380–381, 396–397, 400–401, 412–413, 418–419, 430–431, 436–439, 444–445, 454–455, 468–469, 472–473, 478–479****5-1.8 Recognize the limitations of various forms of mathematical representations.****SE/TE: 328–329, 330–331, 340–341**

110–111, 162–163, 288–289, 314–315, 366–367, 404–405, 432–435, 454–455

NUMBER AND OPERATIONS**Standard 5-2:** The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions.**Indicators****5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths.****SE/TE: 4–5, 10–11, 12–13, 14–17, 28–29, 38–41**

227, 324, 493

- 5-2.2 Apply an algorithm to divide whole numbers fluently.**
SE/TE: 90–92, 94–96, 98–101, 128–129, 130–132, 134–135, 180–183, 186–187, 450–451
232
- 5-2.3 Understand the relationship among the divisor, dividend, and quotient.**
SE/TE: 94
85, 90–92, 128–129, 130–132, 134–135
- 5-2.4 Compare whole numbers, decimals, and fractions by using the symbols $<$, $>$, and $=$.**
SE/TE: 6–8, 12–13, 93, 230–231
28–29, 40, 59, 261, 279
- 5-2.5 Apply an algorithm to add and subtract decimals through thousandths.**
SE/TE: 42–43, 44–45, 46–48, 349
139, 173, 229, 324, 331, 399, 403, 473
- 5-2.6 Classify numbers as prime, composite, or neither.**
SE/TE: 106–109, 212, 232–233, 236
102–104, 234
- 5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.**
SE/TE: 231, 232–233, 234–235, 260–261
- 5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.**
SE/TE: 256–259, 262–263, 264–265, 266–267, 268–269
- 5-2.9 Apply divisibility rules for 3, 6, and 9.**
SE/TE: 102–103, 109
232, 236, 271

ALGEBRA

Standard 5-3: The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions, models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.

Indicators

5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.

SE/TE: 33, 60–61, 105, 122–123, 148–151, 203, 382–384
187, 213, 340–341

5-3.2 Analyze patterns and functions with words, tables, and graphs.

SE/TE: 14–15, 77, 105, 133, 148–151, 179, 382–384, 404–405, 420–421, 494–495
438

5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.

SE/TE: 34–36, 74–76, 105, 110–111, 146–147, 150, 152–154, 190, 223, 288–289, 366–367, 376–377, 378–379, 386–389, 396–397, 420–421
59, 123, 157, 182, 202, 225, 258, 297, 327, 351, 413, 431, 466, 487

5-3.4 Identify applications of commutative, associative, and distributive properties with whole numbers.

SE/TE: 24–26, 58–59, 60–61, 156–157
125, 243, 363

5-3.5 Analyze situations that show change over time.

SE/TE: 420–421, 436–439
455

GEOMETRY

Standard 5-4: The student will demonstrate through the mathematical processes an understanding of congruency, spatial relationships, and relationships among the properties of quadrilaterals.

Indicators

5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.

SE/TE: 210–211, 212–213
269

5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes.**SE/TE: 472–473**

204–205, 206–207, 300–301

TE: 483B**5-4.3 Classify shapes as congruent.****SE/TE: 472–473**

212

5-4.4 Translate between two-dimensional representations and three-dimensional objects.**SE/TE: 326–327, 328–329**

405, 413, 479

5-4.5 Predict the results of multiple transformations on a geometric shape when combinations of translation, reflection, and rotation are used.**SE/TE: 473**

464–467, 468–469, 470–471, 472, 478–479

TE: 483A**5-4.6 Analyze shapes to determine line symmetry and/or rotational symmetry.****SE/TE: 474–476**

470–471

MEASUREMENT

Standard 5-5: The student will demonstrate through the mathematical processes an understanding of the units and systems of measurement and the application of tools and formulas to determine measurements.

Indicators**5-5.1 Use appropriate tools and units to measure objects to the precision of one-eighth inch.****SE/TE: 296–297**

303

5-5.2 Use a protractor to measure angles from 0 to 180 degrees.**SE/TE: 204–205**

312, 313, 449

- 5-5.3 Use equivalencies to convert units of measure within the metric system: converting length in millimeters, centimeters, meters, and kilometers; converting liquid volume in milliliters, centiliters, liters, and kiloliters; and converting mass in milligrams, centigrams, grams, and kilograms.**
SE/TE: 302, 350–351, 352–353, 356–357
350–351
TE: 373A
- 5-5.4 Apply formulas to determine the perimeters and areas of triangles, rectangles, and parallelograms.**
SE/TE: 300–302, 304–305, 306–307, 308–309, 314–315, 336–338
177, 334, 379, 413, 422–423, 448, 453, 469
- 5-5.5 Apply strategies and formulas to determine the volume of rectangular prisms.**
SE/TE: 332–334, 336–338
349, 353, 405
- 5-5.6 Apply procedures to determine the amount of elapsed time in hours, minutes, and seconds within a 24-hour period.**
SE/TE: 358–360, 362–363
487
TE: 373A
- 5-5.7 Understand the relationship between the Celsius and Fahrenheit temperature scales.**
SE/TE: 364–365
TE: 346B, 346D
- 5-5.8 Recall equivalencies associated with length, liquid volume, and mass: 10 millimeters = 1 centimeter, 100 centimeters = 1 meter, 1000 meters = 1 kilometer; 10 milliliters = 1 centiliter, 100 centiliters = 1 liter, 1000 liters = 1 kiloliter; and 10 milligrams = 1 centigram, 100 centigrams = 1 gram, 1000 grams = 1 kilogram.**
SE/TE: 298–299, 350–351, 352–353, 356–357
TE: 373A

DATA ANALYSIS AND PROBABILITY

Standard 5-6: The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability.

Indicators

- 5-6.1 Design a mathematical investigation to address a question.**
TE: 486B, 488B, 492B, 499F
- 5-6.2 Analyze how data-collection methods affect the nature of the data set.**
SE/TE: 430–431
TE: 461A
- 5-6.3 Apply procedures to calculate the measures of central tendency (mean, median, and mode).**
SE/TE: 450–451, 452–453
487
- 5-6.4 Interpret the meaning and application of the measures of central tendency.**
SE/TE: 450–451, 452–453
487
TE: 450B–451B, 452B–453B
- 5-6.5 Represent the probability of a single-stage event in words and fractions.**
SE/TE: 488–491, 492–493
TE: 488B, 491B
- 5-6.6 Conclude why the sum of the probabilities of the outcomes of an experiment must equal 1.**
SE/TE: 488–490
TE: 499E

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Grade Six

MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 6-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

The indicators for this standard, which are appropriate for grades six through eight, are adapted from Principles and Standards for School Mathematics (NCTM 2000). Classroom application should be based on the standard and its indicators; the mathematical goals for the class; and the skills, needs, and understandings of the particular students.

Indicators

6-1.1 Generate and solve complex abstract problems that involve modeling physical, social, and/or mathematical phenomena.

This Indicator is taught throughout the program. For examples, see the following pages:

SE/TE: 14–15, 22–23, 70–71, 74–75, 78–79, 102–103, 110–111, 190–191, 202–203, 204–205, 226–229

TE: 22B, 64B, 70B, 74B, 76B, 78B, 102B, 110B, 190B, 202B, 204B, 206B, 226B

6-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.

SE/TE: 136–137

TE: 136B

6-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.

SE/TE: 12, 23, 87, 113, 123, 149, 165, 233, 264, 274, 276, 281, 336, 374, 375, 391, 402, 406, 413, 432, 469, 484, 489, 523, 526, 532

- 6-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.**
SE/TE: 32–33, 46–47, 102–103, 106–107, 242–243, 302–303, 310–311, 322–323, 324–325, 326–327, 330–331, 372–373
TE: 32B, 46B, 102B, 106B, 242B, 302B, 310B, 322B, 324B, 326B, 330B, 372B
- 6-1.5 Generalize mathematical statements based on inductive and deductive reasoning.**
SE/TE: 32–33, 34–35, 36–37, 282–283, 284–285
- 6-1.6 Use correct and clearly written or spoken words, variables, and notations to communicate about significant mathematical tasks.**
This Indicator is taught throughout the program. For examples, see the following pages:
SE/TE: 8–9, 32–33, 46–47, 96–97, 120–121, 144–145, 164–165, 186–187, 202–203, 222–223, 290–291, 306–307, 326–327, 348–349, 372–373, 400–401, 434–435, 458–489, 490–491, 530–531
- 6-1.7 Generalize connections among a variety of representational forms and real-world situations.**
SE/TE: 24–25, 50–51, 84–85, 102–103, 110–111, 136–137, 250–252, 314–315, 328–329, 390–391, 444–446, 466–468, 488–489, 510–511
- 6-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.**
SE/TE: 24–25, 50–52, 102–105, 110–112, 194–195, 290–291, 376–377, 380–381, 390–391
178–179, 314–315, 328–329, 418–419, 466–468, 476–479, 480–483, 488–489, 454–455

NUMBER AND OPERATIONS

Standard 6-2: The student will demonstrate through the mathematical processes an understanding of the concepts of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.

Indicators

- 6-2.1 Understand whole-number percentages through 100.**
SE/TE: 344–347, 348–349, 350–351, 352–353, 356–357, 358–361, 362–363
TE: 344B, 348B, 350B, 352B, 356B, 358B, 362B

- 6-2.2 Understand integers.**
SE/TE: 222–223, 224–225
226–227, 230–231, 234–235, 238–239, 240–241, 242–243, 246–247
TE: 222B, 224B
- 6-2.3 Compare rational numbers and whole–number percentages through 100 by using the symbols \leq , \geq , $<$, $>$, and $=$.**
SE/TE: 8–9, 22–23, 224–225,
TE: 8B, 9B, 22B, 23B, 224B, 225B
- 6-2.4 Apply an algorithm to add and subtract fractions.**
SE/TE: 162–163, 166–168, 170–171, 172–173, 174–176
TE: 162B, 163B, 166B, 170B, 171B, 172B, 173B, 174B
- 6-2.5 Generate strategies to multiply and divide fractions and decimals.**
SE/TE: 70–71, 78–79, 190–191, 192–193, 206–207, 208–209, 210–211
TE: 70B, 73B, 78B, 79B, 190B, 191B, 192B, 193B, 206B, 207B, 208B, 209B, 210B, 212B
- 6-2.6 Understand the relationship between ratio/rate and multiplication/division.**
SE/TE: 300–301, 302–305, 306–307
308–309, 310–312
TE: 300B, 301B, 302B, 305B, 306B, 307B
- 6-2.7 Apply strategies and procedures to determine values of powers of 10, up to 10^6 .**
SE/TE: 10–12, 37
TE: 10B, 13B
- 6-2.8 Represent the prime factorization of numbers by using exponents.**
SE/TE: 124–125, 126
TE: 125B
- 6-2.9 Represent whole numbers in exponential form.**
SE/TE: 10–12, 37
TE: 10B, 13B

ALGEBRA

Standard 6-3: The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.

Indicators

- 6-3.1 Analyze numeric and algebraic patterns and pattern relationships.**
SE/TE: 48–49, 214–215, 290–291, 376–377, 378–379
TE: 48B, 49B, 214B, 215B, 290B, 291B, 376B, 377B, 378B, 379B
- 6-3.2 Apply order of operations to simplify whole-number expressions.**
SE/TE: 36–38
40–41, 46–47
TE: 36B, 39B
- 6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.**
SE/TE: 32–33, 46–47, 48–49
30–31, 36–37
TE: 32B, 33B, 46B, 47B, 48B, 49B
- 6-3.4 Use the commutative, associative, and distributive properties to show that two expressions are equivalent.**
SE/TE: 36–38, 40–41
42–45
TE: 36B, 39B, 40B, 41B
- 6-3.5 Use inverse operations to solve one-step equations that have whole-number solutions and variables with whole-number coefficients.**
SE/TE: 96–97, 102–105, 106–107, 110–112
302–305, 306–307, 308–309, 310–312
TE: 96B, 97B, 102B, 105B, 106B, 107B, 110B, 113B, 110B, 113B

GEOMETRY

Standard 6-4: The student will demonstrate through the mathematical processes an understanding of shape, location, and movement within a coordinate system; similarity, complementary, and supplementary angles; and the relationship between line and rotational symmetry.

Indicators

- 6-4.1** Represent with ordered pairs of integers the location of points in a coordinate grid.
SE/TE: 246-249, 382–385
TE: 246B, 249B, 382B, 385B
- 6-4.2** Apply strategies and procedures to find the coordinates of the missing vertex of a square, rectangle, or right triangle when given the coordinates of the polygon’s other vertices.
SE/TE: 246-249
- 6-4.3** Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.
TE: 289B
- 6-4.4** Construct two–dimensional shapes with line or rotational symmetry.
SE/TE: 288–289, 330
TE: 288B, 289B
- 6-4.5** Identify the transformation(s) used to move a polygon from one location to another in the coordinate plane.
TE: 287B
- 6-4.6** Explain how transformations affect the location of the original polygon in the coordinate plane.
TE: 287B
- 6-4.7** Compare the angles, side lengths, and perimeters of similar shapes.
SE/TE: 330–333, 337, 429
334–337
TE: 330B, 333B, 337B
- 6-4.8** Classify shapes as similar.
SE/TE: 330–333, 337, 429
334–337
TE: 330B, 333B, 337B
- 6-4.9** Classify pairs of angles as either complementary or supplementary.
SE/TE: 270–271
TE: 270B

MEASUREMENT

Standard 6-5: The student will demonstrate through the mathematical processes an understanding of surface area; the perimeter and area of irregular shapes; the relationships among the circumference, diameter, and radius of a circle; the use of proportions to determine unit rates; and the use of scale to determine distance.

Indicators

- 6-5.1 Explain the relationships among the circumference, diameter, and radius of a circle.**
SE/TE: 282–283, 438–441
TE: 282B, 283B, 438B, 441B
- 6-5.2 Apply strategies and formulas with an approximation of π (3.14, or $\frac{22}{7}$) to find the circumference and area of a circle.**
SE/TE: 438–441
TE: 438B, 441B
- 6-5.3 Generate strategies to determine the surface area of a rectangular prism and a cylinder.**
TE: 458B
See also, Grade 5.
- 6-5.4 Apply strategies and procedures to estimate the perimeters and areas of irregular shapes.**
SE/TE: 382–385, 386–387, 388–391, 391B, 392–395, 396–397
TE: 382B, 385B, 386B, 387B, 388B, 392B, 395B, 396B, 397B
- 6-5.5 Apply strategies and procedures of combining and subdividing to find the perimeters and areas of irregular shapes.**
SE/TE: 430–433
TE: 430B, 433B
- 6-5.6 Use proportions to determine unit rates.**
SE/TE: 324–325
TE: 324B, 325B
- 6-5.7 Use a scale to determine distance.**
SE/TE: 344–337
TE: 334B, 337B

DATA ANALYSIS AND PROBABILITY

Standard 6-6: The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample.

Indicators

- 6-6.1** Predict the characteristics of one population based on the analysis of sample data.
SE/TE: 502–504
TE: 502B, 505B
- 6-6.2** Organize data in frequency tables, histograms, or stem–and–leaf plots as appropriate.
SE/TE: 494–497, 498–499
TE: 494B, 497B, 498B, 499B
- 6-6.3** Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.
SE/TE: 490–493, 500–501, 506–509
TE: 490B, 493B, 500B, 501B, 506B, 509B
- 6-6.4** Use theoretical probability to determine the sample space and probability for one– and two–stage events such as tree diagrams, models, lists, charts, and pictures.
SE/TE: 530–533
TE: 530B, 533B
- 6-6.5** Apply procedures to calculate the probability of complementary events.
SE/TE: 534–535



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