

A Correlation of

Scott Foresman • Addison Wesley

en**Vision**MATH™

to the

Delaware Mathematics Curriculum Framework Grades K-6

PEARSON

O/M-186

Correlation Introduction

This correlation is designed to show the close alignment between Scott Foresman-Addison Wesley enVisionMATH and the State of Delaware Mathematics Curriculum Framework. Correlation page references are to the Teacher's Edition and Student Edition.

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 Delaware Mathematics Curriculum Framework
Kindergarten**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

All students in Kindergarten will be able to:

Number sense:

- **Count sets of objects up to 20**

Topic 4: 51A-52C, 55A-56C

Topic 5: 75A-76C, 81A-82C, 87A-88C

Topic 12: 213A-214C, 215A-216C, 217A-218C, 219A-220C

- **Connect number words and numerals (up to 10) to the quantities they represent using various physical models and representations**

Topic 4: 51A-52C, 53A-54C, 55A-56C, 57A-58C, 59A-60C

Topic 5: 75A-76C, 79A-80C, 81A-82C, 85A-86C, 87A-89C, 91A-92C

Topic 12: 213A-214C, 215A-216C, 217A-218C, 219A-220C

- **Sequence numbers and explain what comes before, after and between other numbers**

Topic 5: 93A-94C

Topic 12: 223A-224C, 225A-226C, 231A-232C

Topic 15: 277A-278C, 279A-280C

- **Show more than one way to make numbers up to 10**

Topic 4: 61A-62C

Topic 5: 77A-78C, 83A-84C, 89A-90C

Operations:

- **Use manipulatives to model putting together and taking apart (e.g., you have one cookie and you get two more cookies)**

Topic 10: 177A-178C, 179A-180C, 181A-182C, 183A-184C, 185A-186C, 187A-188C, 189A-190C

Topic 11: 195A-196C, 197A-198C, 199A-200C, 201A-202C, 203A-204C, 205A-206C, 207A-208C

- **Use manipulatives to show more than one way to make a target number up to 6**

Topic 4: 61A-62C

Topic 5: 75A-76C

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

All students in Kindergarten will be able to:

Patterns and change:

- **Sort objects by a given attribute (e.g., size, color, shape)**

Topic 1: 5A-6C, 7A-8C, 9A-10C, 11A-12C

Topic 7: 115A-116C, 117A-118C, 125A-126C

- **Repeat and extend a simple repeating pattern given the core**

Topic 3: 33A-34C, 35A-36C, 37A-38C

- **Find visual patterns in the world around us (e.g., patterns in the rug, in the wallpaper)**

Topic 3: 39, 41, 43

- **Discuss things that repeat in cyclic patterns, (e.g., day and night, days of week)**

Topic 3: 42A

Topic 14: 255A-256C

Topic 15: 271A-272C, 273A-274C

Representations:

- **Model join and separate situations with objects and pictures**

Topic 10: 177A-178C, 179A-180C, 181A-182C, 183A-184C, 185A-186C, 187A-188C, 189A-190C

Topic 11: 195A-196C, 197A-198C, 199A-200C, 201A-202C, 203A-204C, 205A-206C, 207A-208C

Symbols:

- **Record mathematical thinking symbolically with teacher assistance**

Topic 10: 183A-184C, 185A-186C, 187A-188C

Topic 11: 201A-202C, 203A-204C, 205A-206C

Topic 13: 237A-238C

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

All students in Kindergarten will be able to:

Classification:

- **Name and sort figures by shape (e.g., rectangle, triangle, circle)**

Topic 1: 9A-10C, 11A-12C

Topic 7: 115A-116C, 117A-118C, 125A-126C

- **Recognize attributes and parts of two-dimensional and three-dimensional shapes**

Topic 7: 115A-116C, 117A-118C, 119A-120C, 125A-126C, 127A-128C, 129A-130C

- **Recognize geometric shapes and structures in the environment**

Topic 7: 115, 116, 116A, 116C, 117, 118, 118A, 118C, 119, 126, 126A, 127, 130, 131, 132

Location and transformation:

- **Find and name locations with simple relationships (e.g., near to, over, under, beside, between, outside, inside)**

Topic 2: 17A-18C, 19A-20C, 21A-22C, 23A-24C, 25A-26C, 27A-28C

Measurement:

- **Compare the length of two objects by placing them side by side**

Topic 9: 155A-156C, 157, 158A, 158C

- **Find items that are longer than or shorter than a given measure (e.g., longer than 10 linker cubes)**

Topic 9: 155, 156, 156C, 157, 158A, 158C

- **Talk about time using calendar (e.g., today, tomorrow and yesterday, and the date)**

Topic 15: 275A-276C, 277A-278C, 279A-280C

- **Describe and compare volume/capacity of two objects (e.g., full/empty, more/less)**

Topic 9: 163A-164C

- **Describe and compare the mass/weight of two objects (e.g., light/ heavy)**

Topic 9: 167A-168C

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

All students in Kindergarten will be able to:

Collect:

- **Gather and report data about oneself and familiar surroundings using teacher defined categories (preference out of two choices)**

Topic 5: 95A-96C

Topic 16: 288, 291A-292C, 294A, 296A, 298A, 300A

Represent:

- **Use physical objects to organize and informally represent categorical data**

Topic 16: 291, 292A, 293A-294C, 295A-296C, 298C

Analyze:

- **Interpret data by making simple comparisons (e.g., more, less, the same)**

Topic 5: 95A-96C

Topic 16: 289A-290C, 291A-292C, 293A-294C, 295A-296C, 298, 298C, 301A-302C

Probability:

- Explore events as likely or unlikely based on shared or personal experiences

Topic 16: 299A-300C

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- **Build new mathematical knowledge**

Topic 4: 69A-70C

Topic 5: 95A-96C

Topic 7: 131A-132C

Topic 9: 161A-162C, 171A-172C

Topic 12: 231A-232C

Topic 13: 247A-248C

Topic 16: 301A-302C

- **Solve problems that arise in mathematics and in other contexts**

Topic 1: 11A-12C

Topic 2: 27A-28C

Topic 3: 41A-42C

Topic 4: 69A-70C

Topic 5: 95A-96C

Topic 6: 109A-110C

Topic 7: 131A-132C

Topic 8: 141A-142C, 147A-148C

Topic 9: 161A-162C, 171A-172C

Topic 10: 189A-190C

Topic 11: 207A-208C

Topic 12: 231A-232C

Topic 13: 247A-248C

Topic 14: 265A-266C

Topic 15: 283A-284C

Topic 16: 301A-302C

- **Apply and adapt a variety of appropriate strategies to solve problems**

Topic 1: 11A-12C

Topic 2: 27A-28C

Topic 3: 41A-42C

Topic 4: 69A-70C

Topic 5: 95A-96C

Topic 6: 109A-110C

- **Apply and adapt a variety of appropriate strategies to solve problems (Continued)**

Topic 7: 131A-132C

Topic 8: 141A-142C, 147A-148C

Topic 9: 161A-162C, 171A-172C

Topic 10: 189A-190C

Topic 11: 207A-208C

Topic 12: 231A-232C

Topic 13: 247A-248C

Topic 14: 265A-266C

Topic 15: 283A-284C

Topic 16: 301A-302C

- **Monitor and reflect on the process of mathematical problem solving**

Topic 1: 11A-12C

Topic 2: 27A-28C

Topic 3: 41A-42C

Topic 4: 69A-70C

Topic 5: 95A-96C

Topic 6: 109A-110C

Topic 7: 131A-132C

Topic 8: 141A-142C, 147A-148C

Topic 9: 161A-162C, 171A-172C

Topic 10: 189A-190C

Topic 11: 207A-208C

Topic 12: 231A-232C

Topic 13: 247A-248C

Topic 14: 265A-266C

Topic 15: 283A-284C

Topic 16: 301A-302C

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 1: 11A-12C

Topic 3: 43A-44C

Topic 4: 69A-70C

Topic 9: 161A-162C, 171A-172C

Topic 14: 265A-266C

- **Make and investigate mathematical conjectures**

Topic 3: 43A-44C

Topic 9: 161A-162C, 171A-172C

- **Develop and evaluate mathematical arguments and proofs**

Topic 1: 11A-12C

Topic 3: 43A-44C

Topic 4: 69A-70C

Topic 9: 161A-162C, 171A-172C

Topic 14: 265A-266C

- **Select and use various types of reasoning and methods of proof**

Topic 1: 11A-12C

Topic 3: 43A-44C

Topic 4: 69A-70C

Topic 9: 161A-162C, 171A-172C

Topic 14: 265A-266C

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 5

Topic 2: 19

Topic 3: 35

Topic 4: 53

Topic 5: 77

Topic 6: 105

Topic 7: 119

Topic 8: 139

Topic 9: 153

Topic 10: 179

Topic 11: 201

Topic 12: 221

Topic 13: 239

Topic 14: 255

Topic 15: 273

Topic 16: 297

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 12C

Topic 2: 26C

Topic 3: 42C

Topic 4: 56C

Topic 5: 78C

Topic 6: 108C

Topic 7: 122C

Topic 8: 138C

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others (Continued)**

Topic 9: 158C

Topic 10: 188C

Topic 11: 206C

Topic 12: 228C

Topic 13: 246C

Topic 14: 262C

Topic 15: 276C

Topic 16: 294C

- **Analyze and evaluate the mathematical thinking and strategies of others**

Topic 1: 12C

Topic 2: 26C

Topic 3: 42C

Topic 4: 56C

Topic 5: 78C

Topic 6: 108C

Topic 7: 122C

Topic 8: 138C

Topic 9: 158C

Topic 10: 188C

Topic 11: 206C

Topic 12: 228C

Topic 13: 246C

Topic 14: 262C

Topic 15: 276C

Topic 16: 294C

- **Use the language of mathematics to express mathematical ideas precisely**

Topic 1: 5

Topic 2: 19

Topic 3: 35

Topic 4: 53

Topic 5: 77

Topic 6: 105

Topic 7: 119

Topic 8: 139

Topic 9: 153

Topic 10: 179

Topic 11: 201

Topic 12: 221

Topic 13: 239

Topic 14: 255

Topic 15: 273

Topic 16: 297

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 11A-12C

Topic 2: 24C

Topic 3: 37A-38C

Topic 4: 61A-62C

Topic 5: 77A-78C

Topic 6: 99H

Topic 7: 119A-120C

Topic 8: 137A-138C

Topic 9: 157A-158C

Topic 10: 186C

Topic 11: 208A

Topic 12: 223A-224C

Topic 13: 245A-246C

Topic 14: 257A-258C

Topic 15: 275A-276C

Topic 16: 289A-290C

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 11A-12C

Topic 2: 24C

Topic 3: 37A-38C

Topic 4: 61A-62C

Topic 5: 77A-78C

Topic 6: 99H

Topic 7: 119A-120C

Topic 8: 137A-138C

Topic 9: 157A-158C

Topic 10: 186C

Topic 11: 208A

Topic 12: 223A-224C

Topic 13: 245A-246C

Topic 14: 257A-258C

Topic 15: 275A-276C

Topic 16: 289A-290C

- **Recognize and apply mathematics in contexts outside of mathematics**

Topic 1: 10C

Topic 2: 28C

Topic 3: 33A-34C

Topic 4: 54C

Topic 5: 80C

• Recognize and apply mathematics in contexts outside of mathematics (Continued)

Topic 6: 108C

Topic 7: 114

Topic 8: 136

Topic 9: 163

Topic 10: 189A-190C

Topic 11: 203

Topic 12: 212

Topic 13: 247A-248C

Topic 14: 255A-256C

Topic 15: 271A-272C

Topic 16: 291A-292C

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade One**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the kindergarten expectations, all students in Grade 1 will be able to:

Number sense:

- **Count sets of objects up to 50 by 1s, 2s, 5s, and 10s**

Topic 1: 3A-6B, 7A-10B, 11A-14B

Topic 10: 263A-266B, 267A-270B, 271A-274B, 275A-278B, 279A-282B, 291A-294B, 295A-298B

Topic 11: 303A-306B, 307A-310B, 311A-314B

Topic 20: 617A-620B

- **Connect number words and numbers (up to 50) to the quantities they represent using physical models and representations**

Topic 1: 3A-6B, 7A-10B, 11A-14B, 15A-18B, 19A-22B, 23A-26B

Topic 10: 263A-266B, 267A-270B, 271A-274B

Topic 11: 303A-306B, 307A-310B, 311A-314B, 315A-318B

- **Sequence numbers and explain which is larger, which is smaller, and what is between other numbers up to 100**

Topic 2: 39A-42B, 43A-46B

Topic 10: 275A-278B

Topic 12: 343A-346B, 347A-350B, 351A-354B, 359A-362B

- **Compose and decompose numbers up to 20**

Topic 1: 7A-10B, 11A-14B, 19A-22B

Topic 3: 51A-54B, 55A-58B, 59A-62B, 63A-66B, 67A-70B, 71A-74B, 75A-78B

Topic 4: 83A-86B, 87A-90B, 91A-94B, 95A-98B, 99A-102B, 103A-106B, 107A-110B, 111A-114B

Topic 5: 119A-122B, 123A-126B, 127A-130B, 131A-134B, 135A-138B

Topic 6: 143A-146B, 147A-150B, 151A-154B, 155A-158B, 159A-162B, 163A-166B

Topic 7: 171A-174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 10: 263A-266B, 267A-270B

Topic 11: 303A-306B, 307A-310B, 311A-314B, 315A-318B, 319A-322B, 323A-326B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 497A-500B, 501A-504B

Topic 17: 517A-520B, 521A-524B, 525A-528B, 529A-532B, 533A-536B

Operations:

- **Use manipulatives and pictures to model putting together and taking apart numbers up to 20**

Topic 3: 51A-54B, 55A-58B, 59A-62B, 63A-66B, 67A-70B, 71A-74B, 75A-78B

Topic 4: 83A-86B, 87A-90B, 91A-94B, 95A-98B, 99A-102B, 103A-106B, 107A-110B, 111A-114B

Topic 5: 119A-122B, 123A-126B, 127A-130B, 131A-134B

Topic 6: 143A-146B, 147A-150B, 151A-154B, 155A-158B, 159A-162B, 163A-166B

Topic 7: 171A-174B, 175A-178B, 179A-182B, 183, 186, 186B, 187A-190B

Topic 11: 303A-306B, 307A-310B, 311A-314B, 315A-318B, 319A-322B, 323A-326B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 497A-500B, 501A-504B

Topic 17: 517A-520B, 521A-524B, 525A-528B, 532B, 533A-536B

- **Write number sentences to represent addition combinations up to 10**

Topic 3: 63A-66B, 67A-70B, 71A-74B

Topic 4: 95A-98B, 99A-102B, 107A-110B, 111A-114B

Topic 6: 163A-166B

Topic 13: 387A-390B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 493A-496B, 500, 500B, 504, 504B

- **Use manipulatives and models to demonstrate doubles**

Topic 3: 57, 58B

Topic 5: 121, 122, 125, 126B, 129, 130B, 134B

Topic 6: 147A-150B

Topic 7: 175A-178B

Topic 16: 481A-484B, 485A-488B, 489A-492B

- **Use direct models, manipulatives and pictures to demonstrate joining and separating problems**

Topic 3: 51A-54B, 55A-58B, 59A-62B, 63A-66B, 67A-70B, 71A-74B, 75A-78B

Topic 4: 83A-86B, 87A-90B, 91A-94B, 95A-98B, 99A-102B, 107A-110B, 111A-114B

Topic 6: 143A-146B, 147A-150B, 151A-154B, 155A-158B, 159A-162B, 163A-166B

Topic 7: 171A-174B, 175A-178B, 187A-190B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 493A-496B, 497A-500B, 501A-504B

Topic 17: 517A-520B, 521A-524B, 525A-528B, 532B, 533A-536B

Topic 20: 609A-612B, 617A-620B, 621A-624B, 629A-632B, 633A-636B

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the kindergarten expectations, all students in Grade 1 will be able to:

Patterns and change:

- **Sort objects by one attribute and then re-sort by another**

Topic 8: 235A-238B

- **Describe the rule used to sort a given a set of pre-sorted objects**

Topic 8: 202B, 237, 238B

- **Determine the core of the pattern given a set of objects with multiple repetitions (of a simple pattern)**

Topic 8: 198B, 205, 213, 214B, 229, 230B, 233

Topic 9: 243A-246B, 247A-250B, 251A-254B, 255A-258B

- **Describe what changes in a repeating pattern**

Topic 8: 198B, 205, 213, 214B, 229, 230B, 233

Topic 9: 243A-246B, 247A-250B, 251A-254B, 255A-258B

Representations:

- **Model situations in which there is a need to join, separate, compare and use part-part-whole: using objects, pictures, geometric models and symbols**

Topic 2: 31A-34B

Topic 3: 51A-54B, 55A-58B, 59A-62B, 63A-66B, 67A-70B, 71A-74B, 75A-78B

Topic 4: 83A-86B, 87A-90B, 91A-94B, 95A-98B, 99A-102B, 103A-106B, 107A-110B, 111A-114B

Topic 5: 119A-122B, 123A-126B

Topic 6: 143A-146B, 147A-150B, 151A-154B, 155A-158B, 159A-162B, 163A-166B

Topic 7: 171A-174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 497A-500B, 501A-504B

Topic 17: 517A-520B, 521A-524B, 525A-528B, 529A-532B, 533A-536B

Topic 20: 609A-612B, 617A-620B, 621A-624B, 629A-632B, 633A-636B

Symbols:

- **Record mathematical thinking (i.e., invented notation)**

Topic 3: 63A-66, 67A-70B, 71A-74B

Topic 4: 95A-98B, 99A-102B, 103A-106B, 107A-110B, 111A-114B

Topic 5: 134B

Topic 6: 143A-146B, 147A-150B, 151A-154B, 161, 162B, 163A-166B

Topic 7: 174, 174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 12: 339A-342B

Topic 13: 367A-370B

Topic 15: 457A-460B, 461A-464B

Topic 16: 481A-484B, 485A-488B, 489A-492B, 493A-499B, 500, 500B, 504, 504B

Topic 17: 517A-520B, 521A-524B, 525A-528B, 529A-532B, 533A-536B

Topic 20: 624, 628, 632, 636

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the kindergarten expectations, all students in Grade 1 will be able to:

Classification:

- **Name and sort plane figures by size and shape**

Topic 8: 195A-198B, 201, 202, 202B, 215A-218B

- **Identify the new shape formed by combining two shapes**

Topic 8: 203A-206B

- **Recognize and compare attributes and parts of two-dimensional and three-dimensional shapes**

Topic 8: 195A-198B, 199A-202B, 227A-230B, 231A-234B

Location and transformation:

- **Explore symmetry through drawings and use of manipulatives**

Topic 8: 219A-222B

- **Describe distance in informal terms (e.g., near, far)**

Topic 14: 406B, 410B, 418B

Measurement:

- **Compare the length of two objects by aligning them**

Topic 14: 395A-398B

- **Put objects in order according to their length**

Topic 14: 395A-398B

- **Compare the weight of two objects using a balance**

Topic 14: 431A-434B, 435A-438B

- **Use nonstandard units to represent how long an object is**

Topic 14: 399A-402B, 403A-406B

- **Fill containers using nonstandard units (e.g., water, sand, centimeter cubes)**

Topic 14: 419A-422B

- **Talk about the days of the week and the days of the month during calendar time**

Topic 15: 469A-472B

- **Recognize coins**

Topic 13: 367A-370B, 371A-374B, 375A-378B, 379A-382B, 383A-386B

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the kindergarten expectations, all students in Grade 1 will be able to:

Collect:

- **Collect categorical data (observe and count frequencies) to answer a question posed by the teacher**

Topic 18: 541A-544B, 557A-560B, 561A-564B, 565A-568B, 569A-572B

Represent:

- **Organize and informally represent categorical data (2 or 3 categories) using drawings or physical objects**

Topic 18: 541A-544B, 557A-560B, 561A-564B, 565A-568B, 569A-572B

Analyze:

- Interpret data by making comparisons between frequencies of categorical data (e.g., how many more)

Topic 18: 541A-544B, 545A-548B, 549A-552B, 557A-560B, 561A-564B, 565A-568B, 569A-572B

Probability:

- Explore events as likely or unlikely, possible or impossible based on shared or personal experience

Topic 18: 573A-576B, 577A-580B

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- Build new mathematical knowledge

Topic 2: 43A-46B

Topic 5: 135A-138B

Topic 6: 163A-166B

Topic 7: 187A-190B

Topic 8: 223A-226B

Topic 9: 255A-258B

Topic 10: 295A-298B

Topic 11: 323A-326B

Topic 12: 359A-362B

Topic 13: 387A-390B

Topic 14: 403A-406B

Topic 15: 473A-476B

Topic 16: 493A-496B, 509A-512B

Topic 17: 533A-536B

Topic 18: 569A-572B, 577A-580B

Topic 19: 601A-604B

Topic 20: 637A-640B

- Solve problems that arise in mathematics and in other contexts

Topic 1: 23A-26B

Topic 2: 43A-46B

Topic 3: 75A-78B

Topic 4: 111A-114B

Topic 5: 135A-138B

Topic 6: 163A-166B

Topic 7: 187A-190B

Topic 8: 223A-226B

Topic 9: 255A-258B

Topic 10: 295A-298B

- **Solve problems that arise in mathematics and in other contexts (Continued)**
 - Topic 11: 323A-326B
 - Topic 12: 359A-362B
 - Topic 13: 387A-390B
 - Topic 14: 403A-406B
 - Topic 15: 473A-476B
 - Topic 16: 493A-496B, 509A-512B
 - Topic 17: 533A-536B
 - Topic 18: 569A-572B, 577A-580B
 - Topic 19: 601A-604B
 - Topic 20: 637A-640B

- **Apply and adapt a variety of appropriate strategies to solve problems**
 - Topic 1: 23A-26B
 - Topic 2: 43A-46B
 - Topic 3: 75A-78B
 - Topic 4: 111A-114B
 - Topic 5: 135A-138B
 - Topic 6: 163A-166B
 - Topic 7: 187A-190B
 - Topic 8: 223A-226B
 - Topic 9: 255A-258B
 - Topic 10: 295A-298B
 - Topic 11: 323A-326B
 - Topic 12: 359A-362B
 - Topic 13: 387A-390B
 - Topic 14: 403A-406B
 - Topic 15: 473A-476B
 - Topic 16: 493A-496B, 509A-512B
 - Topic 17: 533A-536B
 - Topic 18: 569A-572B, 577A-580B
 - Topic 19: 601A-604B
 - Topic 20: 637A-640B

- **Monitor and reflect on the process of mathematical problem solving**
 - Topic 1: 23A-26B
 - Topic 2: 43A-46B
 - Topic 3: 75A-78B
 - Topic 4: 111A-114B
 - Topic 5: 135A-138B
 - Topic 6: 163A-166B
 - Topic 7: 187A-190B
 - Topic 8: 223A-226B
 - Topic 9: 255A-258B
 - Topic 10: 295A-298B
 - Topic 11: 323A-326B
 - Topic 12: 359A-362B
 - Topic 13: 387A-390B
 - Topic 14: 403A-406B

- **Monitor and reflect on the process of mathematical problem solving (Continued)**

Topic 15: 473A-476B

Topic 16: 493A-496B, 509A-512B

Topic 17: 533A-536B

Topic 18: 569A-572B, 577A-580B

Topic 19: 601A-604B

Topic 20: 637A-640B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 9: 247A-250B, 251A-254B, 255A-258B

Topic 13: 387A-390B

Topic 14: 403A-406B

- **Make and investigate mathematical conjectures**

Topic 9: 247A-250B, 251A-254B, 255A-258B

Topic 13: 387A-390B

Topic 14: 403A-406B

- **Develop and evaluate mathematical arguments and proofs**

Topic 9: 247A-250B, 251A-254B, 255A-258B

Topic 13: 387A-390B

Topic 14: 403A-406B

- **Select and use various types of reasoning and methods of proof**

Topic 9: 247A-250B, 251A-254B, 255A-258B

Topic 13: 387A-390B

Topic 14: 403A-406B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 11

Topic 2: 30

Topic 3: 50

Topic 4: 82

Topic 5: 118

Topic 6: 142

Topic 7: 170

- **Organize and consolidate their mathematical thinking through communication**
(Continued)
 - Topic 8: 195
 - Topic 9: 243
 - Topic 10: 262
 - Topic 11: 303
 - Topic 12: 331
 - Topic 13: 367
 - Topic 14: 395
 - Topic 15: 453
 - Topic 16: 485
 - Topic 17: 517
 - Topic 18: 553
 - Topic 19: 593
 - Topic 20: 609

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**
 - Topic 1: 6B
 - Topic 2: 34B
 - Topic 3: 54B
 - Topic 4: 86B
 - Topic 5: 122B
 - Topic 6: 146B
 - Topic 7: 174B
 - Topic 8: 198B
 - Topic 9: 246B
 - Topic 10: 266B
 - Topic 11: 306B
 - Topic 12: 344B
 - Topic 13: 370B
 - Topic 14: 402B
 - Topic 15: 456B
 - Topic 16: 484B
 - Topic 17: 520B
 - Topic 18: 544B
 - Topic 19: 596B
 - Topic 20: 624B

- **Analyze and evaluate the mathematical thinking and strategies of others**
 - Topic 1: 11
 - Topic 2: 30
 - Topic 3: 50
 - Topic 4: 82
 - Topic 5: 118
 - Topic 6: 142
 - Topic 7: 170
 - Topic 8: 195
 - Topic 9: 243

- **Analyze and evaluate the mathematical thinking and strategies of others (Continued)**

Topic 10: 262

Topic 11: 303

Topic 12: 331

Topic 13: 367

Topic 14: 395

Topic 15: 453

Topic 16: 485

Topic 17: 517

Topic 18: 553

Topic 19: 593

Topic 20: 609

- **Use the language of mathematics to express mathematical ideas precisely**

Topic 1: 11

Topic 2: 30

Topic 3: 50

Topic 4: 82

Topic 5: 118

Topic 6: 142

Topic 7: 170

Topic 8: 195

Topic 9: 243

Topic 10: 262

Topic 11: 303

Topic 12: 331

Topic 13: 367

Topic 14: 395

Topic 15: 453

Topic 16: 485

Topic 17: 517

Topic 18: 553

Topic 19: 593

Topic 20: 609

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 7A-10B

Topic 2: 35A-38B

Topic 3: 75A-78B

Topic 4: 95A-98B

Topic 5: 135A-138B

Topic 6: 163A-166B

Topic 7: 187A-190B

• Recognize and use connections among mathematical ideas (Continued)**Topic 8:** 203A-206B**Topic 9:** 255A-258B**Topic 10:** 267A-270B**Topic 11:** 315A-318B**Topic 12:** 335A-338B**Topic 13:** 367A-370B**Topic 14:** 399A-402B**Topic 15:** 465A-468B**Topic 16:** 485A-488B**Topic 17:** 517A-520B**Topic 18:** 541A-544B**Topic 19:** 585A-588B**Topic 20:** 613A-616B**• Understand how mathematical ideas interconnect and build on one another to produce a coherent whole****Topic 1:** 7A-10B**Topic 2:** 35A-38B**Topic 3:** 75A-78B**Topic 4:** 95A-98B**Topic 5:** 135A-138B**Topic 6:** 163A-166B**Topic 7:** 187A-190B**Topic 8:** 203A-206B**Topic 9:** 255A-258B**Topic 10:** 267A-270B**Topic 11:** 315A-318B**Topic 12:** 335A-338B**Topic 13:** 367A-370B**Topic 14:** 399A-402B**Topic 15:** 465A-468B**Topic 16:** 485A-488B**Topic 17:** 517A-520B**Topic 18:** 541A-544B**Topic 19:** 585A-588B**Topic 20:** 613A-616B

• Recognize and apply mathematics in contexts outside of mathematics

Topic 1: 2

Topic 2: 30

Topic 3: 50

Topic 4: 82

Topic 5: 118

Topic 6: 163A-166B

Topic 7: 187A-190B

Topic 8: 227A-230B

Topic 9: 242

Topic 10: 262

Topic 11: 302

Topic 12: 330

Topic 13: 366

Topic 14: 394

Topic 15: 452

Topic 16: 480

Topic 17: 533A-536B

Topic 18: 545A-548B

Topic 19: 588

Topic 20: 616

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade Two**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the K–1 expectations, all students in Grade 2 will be able to:

Number sense:

- **Develop efficient strategies for counting (e.g., skip counting by 1s, 2s, 5s and 10s)**

Topic 4: 127A-130B

Topic 6: 187A-190B

Topic 17: 515A-518B, 523A-526B, 527A-530B, 543A-546B

- **Demonstrate an understanding that our number system is based on combinations of ones and tens—place value**

Topic 4: 99A-102B, 103A-106B

- **Use combinations of one- and two-digit numbers to build larger (two-digit) numbers**

Topic 4: 103A-106B

Topic 6: 175A-178B

Topic 8: 219A-222B, 223A-226B, 227A-230B

- **Use multiple strategies to compare size of two numbers (counting up, counting back)**

Topic 4: 111A-114B, 115A-118B

Topic 17: 531A-534B

- **Connect number words for fractions with pictures and numerals ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$)**

Topic 12: 351A-354B

Operations:

- **Use number sentences to represent number combinations up to 20**

Topic 1: 3A-6B, 7A-10B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 57, 58, 58B, 61, 62B, 63A-68B

Topic 3: 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91A-94B

Topic 19: 591A-594B

- **Use number sentences with missing addends to represent number combinations up to 20**

Topic 1: 5

Topic 2: 37, 40, 41, 45, 49, 53, 57, 58, 61

Topic 3: 76, 80, 81, 84, 85, 88, 89, 90, 93

- **Use a variety of strategies to solve combination and separation problems up to 100**

Topic 1: 3A-6B, 7A-10B, 15A-18B, 23A-26B, 27A-30B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 51A-54B, 55A-58B, 59A-62B, 63A-66B

Topic 3: 71A-74B, 91A-94B

Topic 6: 171A-174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 7: 195A-198B, 211A-214B

Topic 8: 219A-222B, 223A-226B, 231A-234B, 243A-246B

Topic 9: 251A-254B, 255A-258B, 259A-262B, 263A-266B, 267A-270B, 271A-274B, 275A-278B

Topic 10: 283A-286B, 291A-294B, 295A-298B, 303A-306B

Topic 19: 591A-594B

Topic 20: 623A-626B

- **Show number sentences that demonstrate that addition and subtraction are inverse operations (e.g., join, separate, part-part-whole, compare)**

Topic 1: 23A-26B, 27A-30B

Topic 3: 75A-78B, 79A-82B, 83A-86B, 87A-90B

Topic 7: 207A-210B

- **Represent repeated addition using pictures and models**

Topic 19: 591A-594B

- **Understand that addition of whole numbers result in a larger number and subtraction of whole numbers result in a smaller number**

Topic 1: 3A-6B, 7A-10B, 11A-14B, 15A-18B, 19A-22B, 23A-26B, 27A-30B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 51A-54B, 55A-58B, 59A-62B, 63A-66B

Topic 3: 71A-74B, 75A-78B, 79A-82B, 83A-86B, 87A-90B, 91A-94B

Topic 6: 171A-174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 7: 195A-198B, 199A-202B, 203A-206B, 207A-210B, 211A-214B

Topic 8: 219A-222B, 223A-226B, 227A-230B, 231A-234B, 235A-238B, 239A-242B, 243A-246B

Topic 9: 251A-254B, 255A-258B, 259A-262B, 263A-266B, 267A-270B, 271A-274B, 275A-278B

Topic 10: 283A-286B, 291A-294B, 295A-298B, 303A-306B

Topic 18: 551A-554B, 559-562B, 563A-566B, 575A-578B, 579A-582B

Topic 19: 591A-594B

Topic 20: 623A-626B

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the K–1 expectations, all students in Grade 2 will be able to:

Patterns and change:

- **Sort objects by more than one attribute (e.g., boys with glasses, blue squares)**

Topic 11: 315A-318B, 319A-322B

- **Develop a system for sorting a given set of objects**

Topic 11: 315A-318B, 319A-322B, 331A-334B

- **Create and extend patterns and then translate them into a rule or drawing**

Topic 4: 127A-130B

Topic 6: 187A-190B

Topic 11: 337, 338

Topic 12: 353, 357, 361, 365, 369

- **Describe the rule for a pattern**

Topic 4: 101, 102, 127A-130B

Topic 6: 187A-190B

Topic 11: 338

Topic 12: 353, 357, 361, 365, 369

Topic 17: 527A-530B, 543A-546B

Representations:

- **Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, geometric models and symbols (e.g., multiplicative thinking may be represented by repeated addition and fair shares by repeated subtraction)**

Topic 1: 3A-6B, 7A-10B, 11A-14B, 15A-18B, 19A-22B, 23A-26B, 27A-30B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 51A-54B, 55A-58B, 59A-62B, 63A-66B

Topic 3: 71A-74B, 75A-78B, 79A-82B, 83A-86B, 87A-90B, 91A-94B

Topic 6: 171A-174B, 175A-178B, 179A-182B, 183A-186B, 187A-190B

Topic 7: 195A-198B, 199A-202B, 203A-206B, 207A-210B, 211A-214B

Topic 8: 219A-222B, 223A-226B, 227A-230B, 231A-234B, 235A-238B, 239A-242B, 243A-246B

Topic 9: 251A-254B, 255A-258B, 259A-262B, 263A-266B, 267A-270B, 271A-274B, 275A-278B

Topic 10: 283A-286B, 291A-294B, 295A-298B, 303A-306B

Topic 18: 551A-554B, 559-562B, 563A-566B, 575A-578B, 579A-582B

Topic 19: 591A-594B

Topic 20: 623A-626B

Symbols:

- **Record mathematical thinking using conventional notation**

Topic 1: 3A-6B, 7A-10B, 11A-14B, 15A-18B, 19A-22B, 23A-26B, 27A-30B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 63A-66B

Topic 3: 71A-74B, 75A-78B, 79A-82B, 83A-86B, 87A-90B, 91A-94B

Topic 4: 115A-118B

Topic 5: 143A-146B, 147A-150B, 151A-154B, 155A-158B, 159A-162B, 163A-166B

Topic 6: 171A-174B, 175A-178B, 179A-182B, 183A-186B

Topic 7: 195A-198B, 199A-202B, 203A-206B, 207A-210B, 211A-214B

Topic 8: 219A-222B, 243A-246B

Topic 9: 251A-254B, 255A-258B, 259A-262B, 263A-266B, 267A-270B, 271A-274B, 275A-278B

Topic 10: 283A-286B, 291A-294B, 295A-298B, 303A-306B

Topic 12: 355A-358B, 359A-362B, 367A-370B

Topic 15: 451A-454B, 467A-470B

Topic 17: 531A-534B

Topic 18: 551A-554B

Topic 19: 591A-594B, 595A-598B, 599A-602B, 603A-606B, 607A-610B, 611A-614B

Topic 20: 623A-626B, 627A-630B, 631A-634B

- **Use the = sign to connect equivalent parts in a number sentence**

Topic 1: 3A-6B, 7A-10B, 11A-14B, 15A-18B, 19A-22B, 23A-26B, 27A-30B

Topic 2: 35A-38B, 39A-42B, 43A-46B, 47A-50B, 63A-66B

Topic 3: 71A-74B, 75A-78B, 79A-82B, 83A-86B, 87A-90B, 91A-94B

Topic 6: 171A-174B, 175A-178B, 179A-182B, 183A-186B

Topic 7: 195A-198B, 199A-202B, 203A-206B, 207A-210B, 211A-214B

Topic 8: 219A-222B, 243A-246B

Topic 9: 251A-254B

Topic 10: 291A-294B

Topic 18: 551A-554B

Topic 19: 591A-594B, 595A-598B, 599A-602B, 603A-606B, 607A-610B, 611A-614B

Topic 20: 623A-626B, 627A-630B, 631A-634B

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the K–1 expectations, all students in Grade 2 will be able to:

Classification:

- **Name and sort solid and plane figures by common attributes**

Topic 11: 315A-318B, 319A-322B, 323A-326B, 329A-332B, 331A-334B

Location and transformation:

- **Recognize shapes that have symmetry**

Topic 11: 339A-342B

Measurement:

- **Find objects that are the same in length**

Topic 13: 391, 394B, 395, 398B

- **Compare the length of two objects by counting the number of nonstandard units used to measure them (e.g., linking cubes)**

Topic 13: 378, 391, 392, 394, 395, 396, 398

Topic 14: 443A-446B

- **Balance an object using nonstandard units (e.g., it takes 5 paper clips to balance my pencil)**

Topic 14: 431A-434B, 443, 444, 446B

- **Measure an object by counting repetitions of the same unit of measure (e.g., the length of the desk measured by an index card)**

Topic 13: 383A-386B, 387A-390B

Topic 14: 443, 444

- **Measure a large object more than once using a different tool as the unit of measure each time—decide which one is the “best” for the task**

Topic 13: 398B

Topic 14: 438B

- **Cover up or “fill in” a design using manipulatives (e.g., pattern blocks, color tiles)**

Topic 13: 403A-406B

- **Fill up containers and estimate which container hold more**

Topic 14: 415A-418B, 423A-426B, 427A-430B

- **Talk about the time that events happen (e.g., get up, go to lunch, go home, go to bed)**

Topic 15: 454, 458B

- **Tell time to the hour**

Topic 15: 450, 454B, 458B

- **Identify combinations of coin to make one dollar**

Topic 5: 155A-158B

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the K–1 expectations, all students in Grade 2 will be able to:

Collect:

- **Collect (e.g., observe, count, or survey) categorical data to answer a question posed by the teacher or students**

Topic 16: 478, 479A-482B, 483A-486B, 487A-490B, 503A-506B

Topic 18: 583A-586B

Represent:

- **Demonstrate a variety of informal techniques for organizing and representing categorical data (e.g., tallies, pictures, or physical objects, bar graph with scale provided, line plot)**

Topic 16: 478, 479A-482B, 483A-486B, 487A-490B, 503A-506B

Topic 18: 583A-586B

Analyze:

- **Interpret data by noting characteristics of the graph (e.g., most, least, the same)**

Topic 16: 478, 479A-482B, 483A-486B, 487A-490B, 503A-506B

Topic 18: 583A-586B

Probability:

- **Explore events as more likely or less likely based on informal observation**

Topic 16: 495A-498B, 499A-502B

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

• **Build new mathematical knowledge**

Topic 1: 27A-30B

Topic 2: 63A-66B

Topic 3: 91A-94B

Topic 4: 135A-138B

Topic 5: 163A-166B

Topic 6: 187A-190B

Topic 7: 211A-214B

Topic 8: 243A-246B

Topic 9: 275A-278B

Topic 10: 307A-310B

Topic 11: 243A-246B

Topic 12: 371A-374B

Topic 13: 407A-410B

Topic 14: 443A-446B

Topic 15: 471A-474B

Topic 16: 503A-506B

Topic 17: 543A-546B

Topic 18: 583A-586B

Topic 19: 611A-614B

Topic 20: 635A-638B

• **Solve problems that arise in mathematics and in other contexts**

Topic 1: 27A-30B

Topic 2: 63A-66B

Topic 3: 91A-94B

Topic 4: 135A-138B

Topic 5: 163A-166B

Topic 6: 187A-190B

Topic 7: 211A-214B

Topic 8: 243A-246B

Topic 9: 275A-278B

Topic 10: 307A-310B

Topic 11: 243A-246B

Topic 12: 371A-374B

Topic 13: 407A-410B

Topic 14: 443A-446B

Topic 15: 471A-474B

Topic 16: 503A-506B

- **Solve problems that arise in mathematics and in other contexts (Continued)**
 - Topic 17: 543A-546B
 - Topic 18: 583A-586B
 - Topic 19: 611A-614B
 - Topic 20: 635A-638B

- **Apply and adapt a variety of appropriate strategies to solve problems**
 - Topic 1: 27A-30B
 - Topic 2: 63A-66B
 - Topic 3: 91A-94B
 - Topic 4: 135A-138B
 - Topic 5: 163A-166B
 - Topic 6: 187A-190B
 - Topic 7: 211A-214B
 - Topic 8: 243A-246B
 - Topic 9: 275A-278B
 - Topic 10: 307A-310B
 - Topic 11: 243A-246B
 - Topic 12: 371A-374B
 - Topic 13: 407A-410B
 - Topic 14: 443A-446B
 - Topic 15: 471A-474B
 - Topic 16: 503A-506B
 - Topic 17: 543A-546B
 - Topic 18: 583A-586B
 - Topic 19: 611A-614B
 - Topic 20: 635A-638B

- **Monitor and reflect on the process of mathematical problem solving**
 - Topic 1: 27A-30B
 - Topic 2: 63A-66B
 - Topic 3: 91A-94B
 - Topic 4: 135A-138B
 - Topic 5: 163A-166B
 - Topic 6: 187A-190B
 - Topic 7: 211A-214B
 - Topic 8: 243A-246B
 - Topic 9: 275A-278B
 - Topic 10: 307A-310B
 - Topic 11: 243A-246B
 - Topic 12: 371A-374B
 - Topic 13: 407A-410B
 - Topic 14: 443A-446B
 - Topic 15: 471A-474B
 - Topic 16: 503A-506B
 - Topic 17: 543A-546B
 - Topic 18: 583A-586B
 - Topic 19: 611A-614B
 - Topic 20: 635A-638B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 4: 135A-138B

Topic 10: 307A-310B

Topic 11: 343A-346B

Topic 20: 635A-638B

- **Make and investigate mathematical conjectures**

Topic 10: 307A-310B

- **Develop and evaluate mathematical arguments and proofs**

Topic 4: 135A-138B

Topic 10: 307A-310B

Topic 11: 343A-346B

Topic 20: 635A-638B

- **Select and use various types of reasoning and methods of proof**

Topic 4: 135A-138B

Topic 10: 307A-310B

Topic 11: 343A-346B

Topic 20: 635A-638B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 11

Topic 2: 39

Topic 3: 71

Topic 4: 107

Topic 5: 151

Topic 6: 175

Topic 7: 203

Topic 8: 227

Topic 9: 258

Topic 10: 287

Topic 11: 319

Topic 12: 355

Topic 13: 383

- **Organize and consolidate their mathematical thinking through communication**

(Continued)

Topic 14: 419

Topic 15: 455

Topic 16: 491

Topic 17: 523

Topic 18: 555

Topic 19: 599

Topic 20: 623

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 6B

Topic 2: 38B

Topic 3: 74B

Topic 4: 106B

Topic 5: 150B

Topic 6: 178B

Topic 7: 198B

Topic 8: 230B

Topic 9: 262B

Topic 10: 290B

Topic 11: 322B

Topic 12: 354B

Topic 13: 386B

Topic 14: 422B

Topic 15: 458B

Topic 16: 486B

Topic 17: 522B

Topic 18: 558B

Topic 19: 598B

Topic 20: 626B

- **Analyze and evaluate the mathematical thinking and strategies of others**

Topic 1: 6B

Topic 2: 38B

Topic 3: 74B

Topic 4: 106B

Topic 5: 150B

Topic 6: 178B

Topic 7: 198B

Topic 8: 230B

Topic 9: 262B

Topic 10: 290B

Topic 11: 322B

Topic 12: 354B

Topic 13: 386B

Topic 14: 422B

Topic 15: 458B

- **Analyze and evaluate the mathematical thinking and strategies of others (Continued)**

Topic 16: 486B

Topic 17: 522B

Topic 18: 558B

Topic 19: 598B

Topic 20: 626B

- **Use the language of mathematics to express mathematical ideas precisely**

Topic 1: 11

Topic 2: 39

Topic 3: 71

Topic 4: 107

Topic 5: 151

Topic 6: 175

Topic 7: 203

Topic 8: 227

Topic 9: 258

Topic 10: 287

Topic 11: 319

Topic 12: 355

Topic 13: 383

Topic 14: 419

Topic 15: 455

Topic 16: 491

Topic 17: 523

Topic 18: 555

Topic 19: 599

Topic 20: 623

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 23A-26B

Topic 2: 35A-38B

Topic 3: 75A-78B

Topic 4: 119A-122B

Topic 5: 143A-146B

Topic 6: 171A-174B

Topic 7: 195A-198B

Topic 8: 219A-222B

Topic 9: 251A-254B

Topic 10: 383A-386B

Topic 11: 319A-322B

Topic 12: 351A-354B

Topic 13: 383A-386B

- **Recognize and use connections among mathematical ideas (Continued)**

Topic 14: 415A-418B

Topic 15: 455A-458B

Topic 16: 494B

Topic 17: 511A-514B

Topic 18: 551A-554B

Topic 19: 591A-594B

Topic 20: 623A-626B

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 23A-26B

Topic 2: 35A-38B

Topic 3: 75A-78B

Topic 4: 119A-122B

Topic 5: 143A-146B

Topic 6: 171A-174B

Topic 7: 195A-198B

Topic 8: 219A-222B

Topic 9: 251A-254B

Topic 10: 383A-386B

Topic 11: 319A-322B

Topic 12: 351A-354B

Topic 13: 383A-386B

Topic 14: 415A-418B

Topic 15: 455A-458B

Topic 16: 494B

Topic 17: 511A-514B

Topic 18: 551A-554B

Topic 19: 591A-594B

Topic 20: 623A-626B

• Recognize and apply mathematics in contexts outside of mathematics

Topic 1: 2

Topic 2: 34

Topic 3: 70

Topic 4: 98

Topic 5: 142

Topic 6: 170

Topic 7: 194

Topic 8: 218

Topic 9: 254

Topic 10: 282

Topic 11: 314

Topic 12: 350

Topic 13: 378

Topic 14: 414

Topic 15: 450

Topic 16: 478

Topic 17: 510

Topic 18: 550

Topic 19: 590

Topic 20: 618

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade Three**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the K–2 expectations, all students in Grade 3 will be able to:

Number sense:

- **Demonstrate an understanding that our number system is based on combinations of 1s, 10s, and 100s—place value**

Topic 1: 4A-5B, 6A-7B, 8A-9B

- **Connect counting up and counting back to addition and subtraction**

Topic 2: 32A-33B, 34A-35B

Topic 3: 68A-71B

- **Connect skip counting to multiplication**

Topic 5: 122A-125B

- **Develop understanding of fractions as parts of unit wholes**

Topic 12: 276A-277B, 278A-279B

Topic 13: 306A-307B

- **Compare the size of common fractions using models**

Topic 12: 288A-289B

Operations:

- **Add and subtract numbers up to 100 efficiently and explain the strategies used**

Topic 2: 34A-35B, 36A-39B, 58A-59B

Topic 3: 66A-67B, 68A-71B, 72A-73B

Topic 4: 86A-87B, 88A-89B

- **Master addition and subtraction facts up to 20**

Topic 2: 32, 33, 33B

Topic 3: 66A-67B

- **Develop and use strategies to estimate the results of addition and subtraction operations on whole numbers**

Topic 2: 44A-47B

Topic 3: 74A-77B

Topic 4: 88, 89, 93, 94

- **Use pictures and number sentences to represent multiplication and division problems**

Topic 5: 108A-109B, 110A-113B

Topic 6: 147, 154

Topic 7: 164A-165B, 166A-169B, 170A-171B

Topic 8: 188, 191, 193, 196A-199B

Topic 18: 426A-429B

- **Develop the concept of multiplication by using models to represent and count the number of groups and the number of elements in each group (e.g., repeated addition, arrays, skip counting)**

Topic 5: 108A-109B, 110A-113B, 122A-125B, 126A-127B, 128A-129B, 130A-131B

Topic 6: 140A-141B, 142A-143B, 144A-147B, 148A-149B, 150A-151B

Topic 18: 412A-413B, 416A-417B, 418A-419B, 420A-421B, 426A-429B

Topic 19: 436A-437B, 440A-443B, 444A-445B, 446A-447B

- **Select and use appropriate methods and tools for computing (e.g., mental computation, estimation, calculators, paper and pencil) depending on the context and nature of the computation**

Topic 2: 34-35B, 36A-39B, 44A-47B, 50A-53B, 54A-55B, 56A-57B

Topic 3: 66A-67B, 68A-71B, 72A-73B, 74A-77B

Topic 4: 86A-87B, 88A-89B, 90A-91B, 92A-95B, 96A-97B, 98A-101B

Topic 5: 108A-109B, 110A-113B, 122A-125B, 126A-127B, 128-129B, 130A-131B

Topic 6: 140A-141B, 142A-143B, 144A-147B, 148A-149B, 150A-151B

Topic 7: 164A-165B, 166A-169B, 170A-171B, 174A-177B

Topic 8: 184A-185B, 186A-189B, 190A-191B, 192A-193B, 194A-195B, 196A-199B

Topic 18: 412A-413B, 416A-417B, 418A-419B, 420A-421B, 422A-425B, 426A-429B

Topic 19: 426A-437B, 440A-443B, 444A-445B, 446A-447B

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the K–2 expectations, all students in Grade 3 will be able to:

Patterns and change:

- **Find numeric patterns in a hundreds table**

Topic 2: 34A-35B

Topic 3: 68A-71B

- **Describe the patterns that result when skip-counting**

Topic 5: 122A-125B, 127, 128

Topic 9: 208A-209B

Topic 17: 392B, 396A-397B, 400A-401B

Representations:

- **Model situations that involve the addition, subtraction, and multiplication of whole numbers using objects, pictures, symbols, and geometric models**

Topic 2: 34A-35B, 36A-39B, 48A-49B, 50A-53B, 54A-55B, 56A-57B, 58A-59B

Topic 3: 66A-67B, 68A-71B, 72A-73B, 78A-81B

Topic 4: 86A-87B, 88A-89B, 90A-91B, 96A-97B, 98A-101B

Topic 5: 108A-109B, 110A-113B, 122A-125B, 126A-127B, 128-129B, 130A-131B

Topic 6: 140A-141B, 142A-143B, 144A-147B, 148A-149B, 150A-151B

Topic 18: 412A-413B, 416A-417B, 418A-419B, 420A-421B, 422A-425B, 426A-429B

Symbols:

- **Represent the idea of an unknown quantity using a letter or a symbol**

Topic 2: 32, 33, 35, 37, 38, 39, 42, 48, 49, 54, 55, 56, 57, 59

Topic 3: 66, 67, 70, 71, 73

Topic 4: 98A-100B

Topic 5: 110A-113B

Topic 6: 152, 153, 154, 156

Topic 7: 164, 167, 176

Topic 8: 184A-185B

Topic 18: 426A-427B

- **Develop an understanding of the Commutative and Associative properties of whole number addition as a tool to solve problems (e.g., is $3 + (7 + 2)$ always the same as $(3 + 7) + 2$?)**

Topic 2: 32A-33B

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the K–2 expectations, all students in Grade 3 will be able to:

Classification:

- **Name and sort solid and plane figures using several attributes (e.g., number of corners, number of sides, size)**

Topic 10: 234A-237B, 238A-241B, 246A-247B, 248A-249B, 250A-251B

- **Recognize and represent shapes from different perspectives**

Topic 10: 234A-237B, 241

Topic 11: 260A-263B

Topic 14: 342A-343B

- **Describe, and reason about the results of subdividing and combining shapes**

Topic 10: 247B, 251B

Topic 11: 268A-269B

Location and transformation:

- Describe a flip or slide of a given shape that demonstrates that the two shapes are congruent
Topic 11: 260A-263B
- Describe location and movement using geometric vocabulary (e.g., left, right, front, back)
Topic 11: 260A-263B
- Describe direction of a turn using benchmark turns (e.g., $\frac{1}{4}$ turn, $\frac{1}{2}$ turn, full turn)
Topic 11: 261, 263, 263B

Measurement:

- Explain the need for standard measurement
Topic 14: 328A-331B
- Find objects that match a standard unit (e.g., one inch, one foot, one centimeter, one meter)
Topic 14: 329, 334B, 335
Topic 15: 350B, 350, 351, 352, 353
- Measure objects (height, length of arms, length of foot) using standard measurement units (e.g., cm, inches, feet)
Topic 14: 328A-331B, 332A-333B, 334A-337B
Topic 15: 350A-351B, 352B
- Explore what to do if the unit of measure does not work precisely
Topic 14: 328A-331B, 332A-333B
Topic 15: 350A-351B
- Make number lines and break each unit into smaller units (e.g., $\frac{1}{2}$ units, $\frac{1}{3}$ units, $\frac{1}{4}$ units)
See related concepts and skills:
Topic 14: 332A-333B
- Find the area of a design by counting the number of units used to cover or fill it (e.g., pattern blocks, color tiles)
Topic 14: 329, 334B, 335
Topic 15: 350B, 350, 351, 352, 353
- Fill up measuring devices (e.g., measuring cups) to informally find volume
Topic 14: 338A-339B
Topic 15: 356A-357B
- Estimate how much time has passed during an event
Topic 17: 400A-401B, 404A-405B
- Tell time to the half hour
Topic 17: 392A-395B

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the K–2 expectations, all students in Grade 3 will be able to:

Collect:

- **Collect categorical and numerical data to answer a question posed by the teacher or students**

Topic 20: 458A-459B, 464A-465B, 466A-467B

Represent:

- **Demonstrate a variety of informal and conventional techniques for representing and organizing categorical and numerical data (e.g., tallies, tables, pictographs, bar graphs)**

Topic 20: 458A-459B, 464A-465B, 466A-467B, 483

Analyze:

- **See and describe data as a whole, describing the shape of the distribution; reason about how individual pieces of data relate to the whole**

Topic 20: 468, 470, 471, 471B, 478A-481B

- **Find and use the mode to describe and interpret data**

Topic 20: 458B, 458, 459, 459B, 460B, 461, 463B, 466, 482B, 482, 483B

Probability:

- **Describe the likelihood of an event based on experimental observations using simple randomizing devices (e.g. spinners, number cubes) and ideas such as certain, impossible, and equally likely**

Topic 20: 472A-475B, 476A-477B, 478A-481B

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- **Build new mathematical knowledge**

Topic 1: 24A-25B

Topic 2: 58A-59B

Topic 3: 78A-81B

Topic 4: 98A-101B

Topic 5: 132A-133B

Topic 6: 154A-157B

Topic 7: 174A-177B

• Build new mathematical knowledge (Continued)**Topic 8:** 196A-199B**Topic 9:** 224A-227B**Topic 10:** 252A-253B**Topic 11:** 268A-269B**Topic 12:** 298A-299B**Topic 13:** 316A-319B, 320A-321B**Topic 14:** 342A-343B**Topic 15:** 360A-361B**Topic 16:** 374A-375B, 384A-385B**Topic 17:** 404A-405B**Topic 18:** 426A-429B**Topic 19:** 448A-451B**Topic 20:** 482A-483B**• Solve problems that arise in mathematics and in other contexts****Topic 1:** 24A-25B**Topic 2:** 58A-59B**Topic 3:** 78A-81B**Topic 4:** 98A-101B**Topic 5:** 132A-133B**Topic 6:** 154A-157B**Topic 7:** 174A-177B**Topic 8:** 196A-199B**Topic 9:** 224A-227B**Topic 10:** 252A-253B**Topic 11:** 268A-269B**Topic 12:** 298A-299B**Topic 13:** 316A-319B, 320A-321B**Topic 14:** 342A-343B**Topic 15:** 360A-361B**Topic 16:** 374A-375B, 384A-385B**Topic 17:** 404A-405B**Topic 18:** 426A-429B**Topic 19:** 448A-451B**Topic 20:** 482A-483B**• Apply and adapt a variety of appropriate strategies to solve problems****Topic 1:** 24A-25B**Topic 2:** 58A-59B**Topic 3:** 78A-81B**Topic 4:** 98A-101B**Topic 5:** 132A-133B**Topic 6:** 154A-157B**Topic 7:** 174A-177B**Topic 8:** 196A-199B**Topic 9:** 224A-227B**Topic 10:** 252A-253B**Topic 11:** 268A-269B

- **Apply and adapt a variety of appropriate strategies to solve problems (Continued)**

Topic 12: 298A-299B

Topic 13: 316A-319B, 320A-321B

Topic 14: 342A-343B

Topic 15: 360A-361B

Topic 16: 374A-375B, 384A-385B

Topic 17: 404A-405B

Topic 18: 426A-429B

Topic 19: 448A-451B

Topic 20: 482A-483B

- **Monitor and reflect on the process of mathematical problem solving**

Topic 1: 24A-25B

Topic 2: 58A-59B

Topic 3: 78A-81B

Topic 4: 98A-101B

Topic 5: 132A-133B

Topic 6: 154A-157B

Topic 7: 174A-177B

Topic 8: 196A-199B

Topic 9: 224A-227B

Topic 10: 252A-253B

Topic 11: 268A-269B

Topic 12: 298A-299B

Topic 13: 316A-319B, 320A-321B

Topic 14: 342A-343B

Topic 15: 360A-361B

Topic 16: 374A-375B, 384A-385B

Topic 17: 404A-405B

Topic 18: 426A-429B

Topic 19: 448A-451B

Topic 20: 482A-483B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 1: 24A-25B

Topic 3: 78A-81B

Topic 9: 224A-227B

Topic 10: 252A-253B

Topic 12: 298A-299B

Topic 14: 342A-343B

Topic 15: 360A-361B

Topic 16: 374A-375B

- **Make and investigate mathematical conjectures**

Topic 10: 252A-253B

Topic 12: 299

Topic 16: 374A-375B

- **Develop and evaluate mathematical arguments and proofs**

Topic 1: 24A-25B

Topic 3: 78A-81B

Topic 9: 224A-227B

Topic 10: 252A-253B

Topic 15: 360A-361B

Topic 16: 374A-375B

- **Select and use various types of reasoning and methods of proof**

Topic 1: 24A-25B

Topic 3: 78A-81B

Topic 9: 224A-227B

Topic 10: 252A-253B

Topic 12: 298A-299B

Topic 14: 342A-343B

Topic 15: 360A-361B

Topic 16: 374A-375B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 5

Topic 2: 38

Topic 3: 73

Topic 4: 87

Topic 5: 111

Topic 6: 143

Topic 7: 173

Topic 8: 191

Topic 9: 207

Topic 10: 245

Topic 11: 262

Topic 12: 286

Topic 13: 311

Topic 14: 330

Topic 15: 353

Topic 16: 369

Topic 17: 397

Topic 18: 413

Topic 19: 441

Topic 20: 470

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 17B
Topic 2: 35B
Topic 3: 67B
Topic 4: 89B
Topic 5: 109B
Topic 6: 141B
Topic 7: 165B
Topic 8: 185B
Topic 9: 211B
Topic 10: 241B
Topic 11: 263B
Topic 12: 287B
Topic 13: 319B
Topic 14: 340B
Topic 15: 358B
Topic 16: 375B
Topic 17: 403B
Topic 18: 413B
Topic 19: 448B
Topic 20: 458B

- **Analyze and evaluate the mathematical thinking and strategies of others**

Topic 1: 17B
Topic 2: 35B
Topic 3: 67B
Topic 4: 89B
Topic 5: 109B
Topic 6: 141B
Topic 7: 165B
Topic 8: 185B
Topic 9: 211B
Topic 10: 241B
Topic 11: 263B
Topic 12: 287B
Topic 13: 319B
Topic 14: 340B
Topic 15: 358B,
Topic 16: 375B
Topic 17: 403B
Topic 18: 413B
Topic 19: 448B
Topic 20: 458B

- Use the language of mathematics to express mathematical ideas precisely

Topic 1:	5
Topic 2:	38
Topic 3:	73
Topic 4:	87
Topic 5:	111
Topic 6:	143
Topic 7:	173
Topic 8:	191
Topic 9:	207
Topic 10:	245
Topic 11:	262
Topic 12:	286
Topic 13:	311
Topic 14:	330
Topic 15:	353
Topic 16:	369
Topic 17:	397
Topic 18:	413
Topic 19:	441
Topic 20:	470

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- Recognize and use connections among mathematical ideas

Topic 1:	8A-9B
Topic 2:	34A-35B
Topic 3:	66A-68B
Topic 4:	98A-101B
Topic 5:	108A-109B
Topic 6:	142A-143B
Topic 7:	164A-165B
Topic 8:	184A-185B
Topic 9:	206A-207B
Topic 10:	238A-241B
Topic 11:	260A-263B
Topic 12:	278A-279B
Topic 13:	306A-307B
Topic 14:	335
Topic 15:	360A-361B
Topic 16:	376A-377B
Topic 17:	398A-399B
Topic 18:	425
Topic 19:	436A-437B
Topic 20:	468A-471B

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 8A-9B

Topic 2: 34A-35B

Topic 3: 66A-68B

Topic 4: 98A-101B

Topic 5: 108A-109B

Topic 6: 142A-143B

Topic 7: 164A-165B

Topic 8: 184A-185B

Topic 9: 206A-207B

Topic 10: 238A-241B

Topic 11: 260A-263B

Topic 12: 278A-279B

Topic 13: 306A-307B

Topic 14: 335

Topic 15: 360A-361B

Topic 16: 376A-377B

Topic 17: 398A-399B

Topic 18: 425

Topic 19: 436A-437B

Topic 20: 468A-471B

- **Recognize and apply mathematics in contexts outside of mathematics**

Topic 1: 3

Topic 2: 31

Topic 3: 65

Topic 4: 89

Topic 5: 115

Topic 6: 139

Topic 7: 169

Topic 8: 183

Topic 9: 205

Topic 10: 233

Topic 11: 259

Topic 12: 292

Topic 13: 314

Topic 14: 339

Topic 15: 354

Topic 16: 369

Topic 17: 395

Topic 18: 424

Topic 19: 437

Topic 20: 462

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade Four**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the K–3 expectations, all students in Grade 4 will be able to:

Number sense:

- **Decompose and recompose whole numbers up to 10,000 using a variety of one, two- and three-digit combinations**

Topic 1: 20, 21

Topic 2: 36B, 37, 38, 39B, 40A-41B, 42A-43B

- **Determine factor pairs that make up a given number**

Topic 3: 62A-63B, 64A-65B, 66A-67B

Topic 8: 182A-183B

- **Develop an understanding of fractions as parts of unit wholes and division of whole numbers**

Topic 10: 216A-219B, 220A-221B

- **Demonstrate equivalent forms of common fractions using physical models, pictures, and number lines**

Topic 10: 224A-227B, 228A-229B, 230A-233B

- **Compare and order fractions using physical models, pictures, and number lines**

Topic 10: 234A-235B, 236A-237B

- **Use decimal notation to show the value of coins**

Topic 1: 16A-17B

Topic 12: 269

Topic 13: 293B, 309B

- **Explore negative numbers by extending the number line using familiar applications (elevator, temperature, sea level, debt)**

Topic 16: 360

Operations:

- **Choose the appropriate operation to solve a word problem and explain why**

Topic 1: 44A-47B

Topic 2: 46

Topic 3: 69

Topic 4: 88

Topic 5: 118

Topic 6: 129

Topic 7: 173

Topic 8: 176

Topic 17: 422

- **Add and subtract larger numbers (e.g., three digits + two digits) and explain how the operation works**

Topic 2: 28A-31B, 36A-39B, 40A-41B, 42A-43B

Topic 18: 435

- **Demonstrate mastery of mental math strategies for multiplying numbers (e.g., 25×8)**

Topic 3: 54A-57B, 58A-59B, 66A-67B

Topic 5: 98A-99B

Topic 7: 142A-143B

- **Show how multiplication and division facts up to 50 are related, using arrays, skip counting, and area models**

Topic 4: 80A-81B, 84A-85B

- **Master multiplication facts and the related division facts up to the 10s tables**

Topic 3: 54A-57B, 58A-59B, 62A-63B, 64A-65B, 66A-67B

Topic 4: 80A-81B, 82A-83B, 84A-85B

- **Explain the meaning of the remainder in a division problem based on the context of the problem**

Topic 8: 168A-169B, 170, 171, 172, 173B, 174, 175

- **Develop and use strategies to estimate the results of operations on whole numbers**

Topic 2: 32A-33B

Topic 5: 100A-101B

Topic 7: 144A-145B

Topic 8: 166A-167B, 176, 177B, 178, 179, 179B, 180, 181, 181B

- **Use physical models and pictures to add and subtract benchmark fractions**

Topic 11: 250A-253B, 254A-255B, 256A-257B

- **Find $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$ of a given set or area using models**

Topic 10: 216A-219B

- **Add and subtract decimals using money models**

Topic 13: 296, 297, 303, 308B, 308, 309, 309B

- **Select and use appropriate methods and tools for computing (e.g., mental computation, estimation, calculators, paper and pencil) depending on the context and nature of the computation**

Topic 2: 28A-31B, 32A-33B, 36A-39B, 40A-41B, 42A-43B

Topic 3: 54A-57B, 58A-59B, 62A-63B, 64A-65B, 66A-67B

Topic 4: 76A-79B, 80A-81B, 82A-83B, 84A-85B

Topic 5: 96A-97B, 98A-99B, 106A-109B, 110A-113B, 114A-115B

Topic 7: 142A-143B, 146A-149B, 150A-151B, 152A-153B, 154A-155B

Topic 8: 164A-165B, 168A-169B, 174A-177B, 178A-179B

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the K–3 expectations, all students in Grade 4 will be able to:

Patterns and change:

- **Classify observed patterns of growth according to whether the growth is constant or varied (e.g., plant lab, geometric patterns)**

Topic 6: 132, 133, 133B

Topic 14: 337, 338

Topic 18: 435

- **Record patterns of growth in tables and graphs**

Topic 6: 132, 133, 133B

Topic 14: 337, 338

Topic 18: 435

- **Interpret tables, graphs and real-world events based on how they change over time**

Topic 6: 133

Topic 14: 338

Topic 18: 435

Representations:

- **Model situations that involve the addition, subtraction, multiplication and division of whole numbers using objects, pictures, geometric model, and symbols**

Topic 2: 36A-39B, 40A-41B, 42A-43B

Topic 3: 54A-57B, 58A-59B, 62A-63B, 64A-65B

Topic 4: 76A-79B, 80A-81B, 84A-85B, 86A-89B

Topic 5: 106A-109B

Topic 6: 130A-131B, 132A-133B

Topic 7: 146A-149B, 150A-151B

Topic 8: 168A-169B, 170A-173B, 178A-179B, 180A-181B

Symbols:

- Represent the idea of a variable as an unknown quantity using a letter or symbol

Topic 6: 128A-129B, 130A-131B, 132A-133B

Topic 15: 356

Topic 18: 432, 434A-435B, 436A-437B

- Develop an understanding of the Commutative and Associative Properties of whole number multiplication as a tool to solve problems (e.g., is 4×5 always the same as 5×4 ?)

Topic 3: 60A-61B

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the K–3 expectations, all students in Grade 4 will be able to:

Classification:

- Identify and classify two-dimensional and three-dimensional shapes according to their properties

Topic 9: 202A-203B, 204A-205B, 206A-207B

Topic 15: 346A-349B, 350A-351B

- Identify and build a three-dimensional object from two-dimensional representation of that object

Topic 15: 346, 348, 350A-351B, 353

Location and transformation:

- Identify line and rotational symmetry in two-dimensional shapes

Topic 19: 456A-457B, 458A-459B

- Describe a motion or series of motions that will show that two shapes are congruent (e.g., flip, slide, turn)

Topic 19: 448A-449B, 450A-451B, 452A-453

- Demonstrate an understanding of turn rotation through benchmark angles

Topic 19: 452A-453B, 458A-459B

Measurement:

- Estimate and then measure the length of objects to the nearest whole unit (e.g., find your height in inches or centimeters)

Topic 16: 364A-365B, 374A-375B

- Extend the precision of a standard measurement by using fraction strips to develop $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{10}$ as a “unit of measure.”

Topic 10: 220B, 222B, 222, 224, 225, 226

Topic 16: 365B

- Describe the size of a turn angle using clock faces or geo logo

Topic 9: 200A-201B

Topic 16: 386A, 389, 389B

Topic 19: 458-459, 459B

- Use a ruler to draw lines or geometric figures with given measurements

Topic 16: 365B

- Find the distance around a geometric figure to the nearest whole number (perimeter)

Topic 14: 328A-331B, 332A-333B, 334A-335B

- Find the number of square units it takes to cover a rectangle (area)

Topic 14: 317, 317B, 318, 319, 319B, 332B, 332, 333, 334

- Count the number of cubes it takes to fill a three-dimensional figure (volume)

Topic 15: 354A-355B

- Use measuring cups and graduated cylinders to find volume

Topic 16: 366A-367B, 376A-377B

- Estimate and then measure the mass of an object to the nearest whole unit

Topic 16: 378A-379B

- Tell time to the nearest five minutes

Topic 16: 387, 389, 389B

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the K–3 expectations, all students in Grade 4 will be able to:

Collect:

- Pose questions that can be answered with data; systematically collect and organize both categorical and numerical data

Topic 16: 401, 402A-403B

- Collect categorical data where the data is described using numbers (e.g., how many have five letters in their first name?)

Topic 17: 406A-407B

Represent:

- Construct and use data displays (e.g., tables, scaled pictographs, bar graphs, line plots) in order to answer a question

Topic 17: 402A-403B, 406A-407B, 410A-411B, 416A-417B, 418A-419B, 420A-423B

Analyze:

- Describe a set of data as a whole, noting important features such as concentration of values, spread of the values, and extreme values

Topic 17: 406A-407B, 410A-411B

- Find and use measures of center (mode and median) to summarize and interpret data

Topic 17: 414A-415B, 416, 417, 417B

Probability:

- Describe the outcomes of an experiment or event (e.g., possible/ impossible, certain/ uncertain, less likely/ equally likely/more likely)

Topic 20: 472A-475B

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- Build new mathematical knowledge

Topic 1: 20A-21B

Topic 2: 44A-47B

Topic 3: 68A-69B

Topic 4: 86A-89B

Topic 5: 102A-105B

Topic 6: 134A-135B

Topic 7: 156A-157B

Topic 8: 186A-187B

Topic 9: 208A-209B

Topic 11: 258A-261B

Topic 12: 282A-383B

Topic 13: 308A-309B

Topic 14: 336A-339B

Topic 15: 356A-357B

Topic 16: 392A-393B

Topic 17: 420A-423B

Topic 18: 440A-441B

Topic 19: 460A-461B

Topic 20: 476A-477B

• Solve problems that arise in mathematics and in other contexts**Topic 1:** 20A-21B**Topic 2:** 44A-47B**Topic 3:** 68A-69B**Topic 4:** 86A-89B**Topic 5:** 102A-105B**Topic 6:** 134A-135B**Topic 7:** 156A-157B**Topic 8:** 186A-187B**Topic 9:** 208A-209B**Topic 11:** 258A-261B**Topic 12:** 282A-383B**Topic 13:** 308A-309B**Topic 14:** 336A-339B**Topic 15:** 356A-357B**Topic 16:** 392A-393B**Topic 17:** 420A-423B**Topic 18:** 440A-441B**Topic 19:** 460A-461B**Topic 20:** 476A-477B**• Apply and adapt a variety of appropriate strategies to solve problems****Topic 1:** 20A-21B**Topic 2:** 44A-47B**Topic 3:** 68A-69B**Topic 4:** 86A-89B**Topic 5:** 102A-105B**Topic 6:** 134A-135B**Topic 7:** 156A-157B**Topic 8:** 186A-187B**Topic 9:** 208A-209B**Topic 11:** 258A-261B**Topic 12:** 282A-383B**Topic 13:** 308A-309B**Topic 14:** 336A-339B**Topic 15:** 356A-357B**Topic 16:** 392A-393B**Topic 17:** 420A-423B**Topic 18:** 440A-441B**Topic 19:** 460A-461B**Topic 20:** 476A-477B**• Monitor and reflect on the process of mathematical problem solving****Topic 1:** 20A-21B**Topic 2:** 44A-47B**Topic 3:** 68A-69B**Topic 4:** 86A-89B**Topic 5:** 102A-105B**Topic 6:** 134A-135B

- **Monitor and reflect on the process of mathematical problem solving (Continued)**

- Topic 7: 156A-157B
- Topic 8: 186A-187B
- Topic 9: 208A-209B
- Topic 11: 258A-261B
- Topic 12: 282A-383B
- Topic 13: 308A-309B
- Topic 14: 336A-339B
- Topic 15: 356A-357B
- Topic 16: 392A-393B
- Topic 17: 420A-423B
- Topic 18: 440A-441B
- Topic 19: 460A-461B
- Topic 20: 476A-477B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

- Topic 1: 20A-21B
- Topic 5: 102A-105B
- Topic 6: 134A-135B
- Topic 9: 208A-209B
- Topic 13: 308A-309B
- Topic 15: 356A-357B
- Topic 20: 476A-477B

- **Make and investigate mathematical conjectures**

- Topic 9: 208A-209B
- Topic 13: 308A-309B
- Topic 17: 402A-403B

- **Develop and evaluate mathematical arguments and proofs**

- Topic 9: 208A-209B
- Topic 13: 308A-309B

- **Select and use various types of reasoning and methods of proof**

- Topic 1: 20A-21B
- Topic 5: 102A-105B
- Topic 6: 134A-135B
- Topic 9: 208A-209B
- Topic 13: 308A-309B
- Topic 15: 356A-357B
- Topic 20: 476A-477B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 14B

Topic 2: 17

Topic 3: 56

Topic 4: 82

Topic 5: 99

Topic 6: 131

Topic 7: 143

Topic 8: 165

Topic 9: 197

Topic 10: 238A-241B

Topic 11: 259

Topic 12: 272

Topic 13: 307

Topic 14: 322

Topic 15: 355

Topic 16: 372

Topic 17: 407

Topic 18: 437

Topic 19: 451

Topic 20: 470

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 13B

Topic 2: 14B

Topic 3: 64B

Topic 4: 81B

Topic 5: 108B

Topic 6: 129B

Topic 7: 154B

Topic 8: 174B

Topic 9: 201B

Topic 10: 216B

Topic 11: 255B

Topic 12: 269B

Topic 13: 293B

Topic 14: 317B

Topic 15: 351B

Topic 16: 366B

Topic 17: 403B

Topic 18: 441B

Topic 19: 448B

Topic 20: 469B

- **Analyze and evaluate the mathematical thinking and strategies of others**

- Topic 1: 13B
- Topic 2: 14B
- Topic 3: 64B
- Topic 4: 81B
- Topic 5: 108B
- Topic 6: 129B
- Topic 7: 154B
- Topic 8: 174B
- Topic 9: 201B
- Topic 10: 216B
- Topic 11: 255B
- Topic 12: 269B
- Topic 13: 293B
- Topic 14: 317B
- Topic 15: 351B
- Topic 16: 366B
- Topic 17: 403B
- Topic 18: 441B
- Topic 19: 448B
- Topic 20: 469B

- **Use the language of mathematics to express mathematical ideas precisely**

- Topic 1: 14B
- Topic 2: 17
- Topic 3: 56
- Topic 4: 82
- Topic 5: 99
- Topic 6: 131
- Topic 7: 143
- Topic 8: 165
- Topic 9: 197
- Topic 10: 238A-241B
- Topic 11: 259
- Topic 12: 272
- Topic 13: 307
- Topic 14: 322
- Topic 15: 355
- Topic 16: 372
- Topic 17: 407
- Topic 18: 437
- Topic 19: 451
- Topic 20: 470

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 16A-17B

Topic 2: 31

Topic 3: 59

Topic 4: 79

Topic 5: 109

Topic 6: 130A-131B

Topic 7: 146A-147B

Topic 8: 177

Topic 9: 200A-201B

Topic 10: 227

Topic 11: 261

Topic 12: 276A-279B

Topic 13: 303

Topic 14: 328A-331B

Topic 15: 350A-351B

Topic 16: 386A-389B

Topic 17: 412A-413B

Topic 18: 434A-435B

Topic 19: 458A-459B

Topic 20: 472A-475B

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 16A-17B

Topic 2: 31

Topic 3: 59

Topic 4: 79

Topic 5: 109

Topic 6: 130A-131B

Topic 7: 146A-147B

Topic 8: 177

Topic 9: 200A-201B

Topic 10: 227

Topic 11: 261

Topic 12: 276A-279

Topic 13: 303

Topic 14: 328A-331B

Topic 15: 350A-351B

Topic 16: 386A-389B

Topic 17: 412A-413B

Topic 18: 434A-435B

Topic 19: 458A-459B

Topic 20: 472A-475B

• Recognize and apply mathematics in contexts outside of mathematics

Topic 1: 13

Topic 2: 30

Topic 3: 63

Topic 4: 81

Topic 5: 115

Topic 6: 131

Topic 7: 145

Topic 8: 167

Topic 9: 205

Topic 10: 218

Topic 11: 255

Topic 12: 275

Topic 13: 307

Topic 14: 319

Topic 15: 353

Topic 16: 391

Topic 17: 405

Topic 18: 437

Topic 19: 449

Topic 20: 467

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade Five**

Standard 1 (K–5) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of Number and Operations by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the K–4 expectations, all students in Grade 5 will be able to:

Number sense:

- **Describe whole numbers up to 100,000 using place value structure**

Topic 1: 4A-5B, 6A-9B

- **Develop understanding of fractions as parts of unit wholes, as part of a collection, as locations on number lines, and as division of whole numbers**

Topic 9: 220A-223B, 224A-225B

- **Describe numbers according to characteristics such as evens, odds, factors, multiples, and squares**

Topic 3: 72, 73, 73B

Topic 4: 102A-105B, 106A-109B

Topic 9: 232A-233B

- **Find $\frac{1}{10}$ or 10 times a number using mental math**

Topic 3: 60B, 60, 61, 61B

Topic 7: 170A-171B

- **Generate and connect equivalent forms of benchmark fractions, decimals and percents**

Topic 9: 238A-241B, 242A-243B

Topic 16: 400A-401B

- **Use multiple models and methods to compare decimals**

Topic 1: 12A-13B

Topic 9: 244A-245B

- **Use decimal form to represent benchmark fractions ($\frac{1}{3}$ s, $\frac{1}{4}$ s, $\frac{1}{5}$ s, $\frac{1}{10}$ s)**

Topic 9: 238A-241B

Topic 16: 400A-401B

- **Use multiple methods and models to convert decimals to fractions and fractions to decimals**

Topic 9: 238A-241B, 242A-243B

Topic 16: 400A-401B

- **Develop the meaning of percent as a ratio of a number out of 100**

Topic 16: 398A-399B

- **Use a variety of familiar applications to represent positive and negative numbers as opposites**

Topic 14: 364A-365B

Topic 17: 412A-413B

Operations:

- **Apply more than one operation to solve a word problem**

Topic 2: 46A-49B

Topic 3: 61, 71, 76

Topic 4: 85, 92, 96, 112

Topic 5: 126A-127B

Topic 7: 188A-191B

- **Multiply and divide by large numbers (e.g., two digits by two digits) and show why the operation works**

Topic 3: 68A-69B, 70A-71B

Topic 4: 94A-97B, 98A-101B

Topic 5: 124A-125B, 128A-129B, 130A-133B, 134A-135B

- **Use multiplication clusters to build mental math strategies (e.g., 5×2 , 5×20 , 50×2 , 50×20)**

Topic 3: 60A-61B

Topic 4: 84A-85B

- **Use partial products to verify how multiplication algorithms work**

Topic 3: 68A-69B

- **Use and apply various meanings of multiplication and division (e.g., fair share, repeated addition/ subtraction, compare, rate)**

Topic 3: 58B, 58, 64A-67B, 74A-77B

Topic 4: 84A-85B, 88A-89, 90A-93B, 94A-97B, 98A-101B, 110A-113B

- **Develop and use strategies to estimate the results of operations on whole numbers**

Topic 2: 30A-33B

Topic 3: 62A-63B

Topic 4: 86A-87B

Topic 5: 124A-125B

- **Add and subtract benchmark fractions and fractions with common denominators using physical models**

Topic 10: 256A-259B

- **Multiply fractions by whole numbers using models such as: clock fractions, number/ratio tables, number lines, fractions strips, skip counting or array models**

Topic 11: 278A-279B

- **Multiply numbers by 10, $1/10$ th, 100 and $1/100$ th using mental math**

Topic 3: 60B, 60, 61, 61B

Topic 7: 170A-170B

- **Connect multiplication by $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ to division by its inverse (3, 4, 5)**
(e.g., $12 \times \frac{1}{4} = 12 \div 4$)
Topic 11: 278B-279B
- **Find benchmark percents of numbers using physical models**
Topic 16: 402A-403B, 404A-405B
- **Add and subtract decimals using models**
Topic 2: 42A-43B, 44A-45B, 46A-49B
- **Add and subtract integers using familiar applications such as sea level, elevators, etc.**
Topic 14: 364, 365, 365B
- **Select and use appropriate methods and tools for computing (e.g., mental computation, estimation, calculators, paper and pencil) depending on the context and nature of the computation**
Topic 2: 24A-27B, 30A-33B, 38A-41B, 42A-43B, 44A-45B
Topic 3: 60A-61B, 62A-63B, 64A-67B, 68A-69B, 70A-71B
Topic 4: 84A-85B, 86A-87B, 90A-93B, 94A-97B, 98A-101B
Topic 5: 124A-125B, 128A-129B, 130A-133B, 134A-135B
Topic 7: 170A-171B, 172A-173B, 176A-177B, 178A-179B, 180A-183B, 186A-187B
Topic 10: 256A-259B

Standard 2 (K–5) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the K–4 expectations, all students in Grade 5 will be able to:

Patterns and change:

- **Find a given term in an arithmetic sequence**
Topic 1: 14A-17B
Topic 2: 33
Topic 4: 105
Topic 6: 148B, 149, 150
- **Translate visual patterns into rules**
Topic 6: 148A-151B, 152A-155B
Topic 13: 340A-341B
Topic 15: 382A-385B
Topic 17: 420A-421B
- **Describe trends in patterns and graphs**
Topic 4: 105
Topic 6: 148A-151B, 152A-155B
Topic 13: 340A-341B
Topic 15: 382A-385B
Topic 16: 404A-405B
Topic 17: 420A-421B

Representations:

- **Model problem situations with objects and use representations such as graphs, tables or equations to draw conclusion**

Topic 13: 340A-341B

Topic 15: 382A-385B

Topic 16: 404A-405B

Topic 17: 420A-421B

Symbols:

- **Use equations to express mathematical relationships**

Topic 2: 34A-37B

Topic 3: 74A-77B

Topic 4: 110A-113B

Topic 11: 288A-289B

Topic 15: 382A-385B

Topic 17: 420A-421B

- **Develop an understanding of the Distributive Properties of whole number operations as a tool to solve problems (e.g., is 24×32 ever the same as $20 \times 30 + 4 \times 2$?)**

Topic 6: 156A-157B

Standard 3 (K–5) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the K–4 expectations, all students in Grade 5 will be able to:

Classification:

- **Analyze and classify two-dimensional shapes according to their properties and develop definitions for classes of shapes (e.g., a square is a rectangle is a parallelogram is a quadrilateral)**

Topic 8: 206A-207B, 208A-209B

- **Draw the results of subdividing and combining shapes**

Topic 8: 212-213, 213B

Topic 12: 306B, 306-307, 308B, 308, 309B

Topic 13: 336A-339B

- **Identify and classify angles as acute, right, obtuse, or straight Location and transformation:**

Topic 8: 204A-205B

- **Predict and describe the results of a slide, flip, or turn of two-dimensional shape**

Topic 19: 464A-467B, 468A-469B, 470A-471B

- **Use the coordinate system to specify locations and to describe paths between locations**

Topic 17: 414A-417B, 418, 419, 419B

Measurement:

- **Measure and compare objects using standard measures to the nearest $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{8}$ th unit**

Topic 12: 296A-297B

Topic 14: 348A-349B

- **Measure and compare objects using metric units to the nearest $\frac{1}{10}$ th**

Topic 12: 298A-299B

Topic 14: 350A-351B

- **Use measuring tools to find the size of turn angles in degrees**

Topic 8: 204A-205B

- **Draw benchmark turn angles (30, 45, 60, 90, 180 degrees)**

Topic 8: 204A-205B

- **Find the distance around a geometric figure to the nearest $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{10}$ th of a unit (perimeter)**

Topic 12: 300A-303B

- **Find the number of square units it takes to cover a geometric figure (area)**

Topic 12: 304A-305B, 306A-307B, 308A-309B

Topic 13: 328A-329B, 336B, 336, 337, 338, 339, 339B

- **Find the volume of an object**

Topic 13: 332A-335B, 336, 337, 338, 339, 339B

- **Find the mass of an object to the nearest $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{10}$ of a unit**

Topic 14: 352A-353B

- **Convert a measurement from feet to inches, or from meters to centimeters**

Topic 14: 354A-355B, 356A-357B

- **Find elapsed time**

Topic 14: 358A-361B, 362A-363B

Standard 4 (K–5) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the K–4 expectations, all students in Grade 5 will be able to:

Collect:

- **Pose questions that can be answered with data; systematically collect and organize categorical and numerical/ measurement data**

Topic 18: 429, 430A-431B

Topic 20: 492B

Represent:

- **Construct and use data displays (e.g., tables, scaled pictographs, line plots, bar graphs) in order to answer a question**

Topic 14: 366A-367B

Topic 15: 382A-385B

Topic 16: 404A-406B

Topic 17: 420A-421B

Topic 18: 430A-431B, 432A-435B, 436A-439B, 440A-443B, 444A-445B, 446A-449B, 454A-455B

Analyze:

- **Compare related data sets noting similarities and differences in the distributions**

Topic 18: 430B, 430, 431, 431B

- **Find and use measures of center (mean, median, mode) and spread (range) to summarize and interpret data**

Topic 18: 450A-451B, 452A-453B

- **Identify the typical or average value in a data set as well as any atypical values**

Topic 18: 450A-451B

Probability:

- **Conduct a probability experiment, represent the result as a number (fraction, decimal, percent) between 0 and 1, and draw conclusions from the results**

Topic 20: 486A-487B, 488A-491B, 492A-493B

- **List all possible outcomes (i.e. the sample space) for a probability experiment involving a simple event**

Topic 20: 486A-487B, 488, 489

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- **Build new mathematical knowledge**

Topic 1: 14A-17B

Topic 2: 46A-49B

Topic 3: 74A-77B

Topic 4: 88A-89B, 110A-113B

Topic 5: 126A-127B, 138A-139B

Topic 6: 162A-163B

Topic 7: 188A-191B

Topic 8: 212A-213B

• Build new mathematical knowledge (Continued)**Topic 10:** 270A-271B**Topic 11:** 288A-289B**Topic 12:** 314A-315B**Topic 13:** 340A-341B**Topic 14:** 366A-367B**Topic 15:** 386A-389B**Topic 16:** 404A-405B**Topic 17:** 421A-423B**Topic 18:** 454A-455B**Topic 19:** 478A-479B**Topic 20:** 494A-495B**• Solve problems that arise in mathematics and in other contexts****Topic 1:** 14A-17B**Topic 2:** 46A-49B**Topic 3:** 74A-77B**Topic 4:** 88A-89B, 110A-113B**Topic 5:** 126A-127B, 138A-139B**Topic 6:** 162A-163B**Topic 7:** 188A-191B**Topic 8:** 212A-213B**Topic 10:** 270A-271B**Topic 11:** 288A-289B**Topic 12:** 314A-315B**Topic 13:** 340A-341B**Topic 14:** 366A-367B**Topic 15:** 386A-389B**Topic 16:** 404A-405B**Topic 17:** 421A-423B**Topic 18:** 454A-455B**Topic 19:** 478A-479B**Topic 20:** 494A-495B**• Apply and adapt a variety of appropriate strategies to solve problems****Topic 1:** 14A-17B**Topic 2:** 46A-49B**Topic 3:** 74A-77B**Topic 4:** 88A-89B, 110A-113B**Topic 5:** 126A-127B, 138A-139B**Topic 6:** 162A-163B**Topic 7:** 188A-191B**Topic 8:** 212A-213B**Topic 10:** 270A-271B**Topic 11:** 288A-289B**Topic 12:** 314A-315B**Topic 13:** 340A-341B**Topic 14:** 366A-367B**Topic 15:** 386A-389B

- **Apply and adapt a variety of appropriate strategies to solve problems (Continued)**

Topic 16: 404A-405B

Topic 17: 421A-423B

Topic 18: 454A-455B

Topic 19: 478A-479B

Topic 20: 494A-495B

- **Monitor and reflect on the process of mathematical problem solving**

Topic 1: 14A-17B

Topic 2: 46A-49B

Topic 3: 74A-77B

Topic 4: 88A-89B, 110A-113B

Topic 5: 126A-127B, 138A-139B

Topic 6: 162A-163B

Topic 7: 188A-191B

Topic 8: 212A-213B

Topic 10: 270A-271B

Topic 11: 288A-289B

Topic 12: 314A-315B

Topic 13: 340A-341B

Topic 14: 366A-367B

Topic 15: 386A-389B

Topic 16: 404A-405B

Topic 17: 421A-423B

Topic 18: 454A-455B

Topic 19: 478A-479B

Topic 20: 494A-495B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 1: 14A-17B

Topic 4: 88A-89B

Topic 6: 162A-163B

Topic 8: 212A-213B

Topic 10: 270A-271B

Topic 13: 340A-341B

Topic 14: 366, 367

Topic 15: 386A-389B

Topic 16: 404A-405B

Topic 20: 492A-493B, 494A-495B

- **Make and investigate mathematical conjectures**

Topic 8: 212A-213B

Topic 10: 270A-271B

Topic 20: 492A-493B

- **Develop and evaluate mathematical arguments and proofs**

Topic 8: 212A-213B

Topic 10: 270A-271B

Topic 13: 340A-341B

Topic 14: 366, 367

Topic 15: 386A-389B

Topic 20: 492A-493B, 494A-495B

- **Select and use various types of reasoning and methods of proof**

Topic 1: 14A-17B

Topic 4: 88A-89B

Topic 6: 162A-163B

Topic 8: 212A-213B

Topic 10: 270A-271B

Topic 13: 340A-341B

Topic 14: 366, 367

Topic 15: 386A-389B

Topic 16: 404A-405B

Topic 20: 492A-493B, 494A-495B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 5

Topic 2: 32

Topic 3: 61

Topic 4: 85

Topic 5: 125

Topic 6: 147

Topic 7: 177

Topic 8: 205

Topic 9: 246A-247B

Topic 10: 261

Topic 11: 279

Topic 12: 297

Topic 13: 329

Topic 14: 357

Topic 15: 388

Topic 16: 405

Topic 17: 413

- **Organize and consolidate their mathematical thinking through communication (Continued)**

Topic 18: 442

Topic 19: 468

Topic 20: 494

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 5B

Topic 2: 37B

Topic 3: 59B

Topic 4: 93B

Topic 5: 124B

Topic 6: 157B

Topic 7: 174B

Topic 8: 205B

Topic 9: 241B

Topic 10: 259B

Topic 11: 279B

Topic 12: 305B

Topic 13: 322B

Topic 14: 351B

Topic 15: 379B

Topic 16: 403B

Topic 17: 423B

Topic 18: 451B

Topic 19: 473B

Topic 20: 493B

- **Analyze and evaluate the mathematical thinking and strategies of others**

Topic 1: 5B

Topic 2: 37B

Topic 3: 59B

Topic 4: 93B

Topic 5: 124B

Topic 6: 157B

Topic 7: 174B

Topic 8: 205B

Topic 9: 241B

Topic 10: 259B

Topic 11: 279B

Topic 12: 305B

Topic 13: 322B

Topic 14: 351B

Topic 15: 379B

- **Analyze and evaluate the mathematical thinking and strategies of others (Continued)**

Topic 16: 403B

Topic 17: 423B

Topic 18: 451B

Topic 19: 473B

Topic 20: 493B

- **Use the language of mathematics to express mathematical ideas precisely**

Topic 1: 5

Topic 2: 32

Topic 3: 61

Topic 4: 85

Topic 5: 125

Topic 6: 147

Topic 7: 177

Topic 8: 205

Topic 9: 246A-247B

Topic 10: 261

Topic 11: 279

Topic 12: 297

Topic 13: 329

Topic 14: 357

Topic 15: 388

Topic 16: 405

Topic 17: 413

Topic 18: 442

Topic 19: 468

Topic 20: 494

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 14A-17B

Topic 2: 33

Topic 3: 67

Topic 4: 90A-93B

Topic 5: 133

Topic 6: 148A-151B

Topic 7: 177

Topic 8: 203

Topic 9: 223

Topic 10: 259

Topic 11: 288A-289B

Topic 12: 308A-309B

Topic 13: 326A-327B

- **Recognize and use connections among mathematical ideas (Continued)**

Topic 14: 358A-361B

Topic 15: 389

Topic 16: 400A-401B

Topic 17: 420A-421B

Topic 18: 450A-451B

Topic 19: 472A-473B

Topic 20: 488A-489B

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 14A-17B

Topic 2: 33

Topic 3: 67

Topic 4: 90A-93B

Topic 5: 133

Topic 6: 148A-151B

Topic 7: 177

Topic 8: 203

Topic 9: 223

Topic 10: 259

Topic 11: 288A-289B

Topic 12: 308A-309B

Topic 13: 326A-327B

Topic 14: 358A-361B

Topic 15: 389

Topic 16: 400A-401B

Topic 17: 420A-421B

Topic 18: 450A-451B

Topic 19: 472A-473B

Topic 20: 488A-489B

- **Recognize and apply mathematics in contexts outside of mathematics**

Topic 1: 9

Topic 2: 27

Topic 3: 71

Topic 4: 96

Topic 5: 121

Topic 6: 161

Topic 7: 185

Topic 8: 209

Topic 9: 240

Topic 10: 263

Topic 11: 285

• **Recognize and apply mathematics in contexts outside of mathematics (Continued)**

Topic 12: 295

Topic 13: 321

Topic 14: 361

Topic 15: 375

Topic 16: 395

Topic 17: 411

Topic 18: 429

Topic 19: 476

Topic 20: 493

**Scott Foresman - Addison Wesley enVisionMATH
to the Delaware Mathematics Curriculum Framework
Grade Six**

Standard 1 (6–11) – Numeric Reasoning: Students will develop Numeric Reasoning and an understanding of *Number and Operations* by solving problems in which there is a need to represent and model real numbers verbally, physically, and symbolically; to explain the relationship between numbers; to determine the relative magnitude of real numbers; to use operations with understanding; and to select appropriate methods of calculations from among mental math, paper-and-pencil, calculators, or computers.

Building upon the K–5 expectations, all students in Grade 6 will be able to:

Number sense:

- **Expand understanding of the number system to include numbers in the millions**

Topic 1: 4A-7B, 10A-13B

- **Use factors and multiples to demonstrate part whole relationships**

Topic 5: 120A-123B

- **Use factors and multiples to develop equivalent fraction families**

Topic 4: 132A-133B

- **Scale up or scale down fraction and whole number measurements (e.g., recipes)**

Topic 13: 322, 323, 324A-325B, 326, 327, 327B, 328B, 328, 329B, 330A-333B, 334A-337B

- **Use place value structure to describe the size of decimals**

Topic 1: 14A-17B, 22A-23B

- **Demonstrate equivalence of decimals, fractions, and percents using multiple models**

Topic 6: 146A-147B, 150A-153B

Topic 10: 229

Topic 14: 348A-349B, 350A-351B

Operations:

- **Multiply fractions by whole numbers and explain the result**

Topic 8: 186A-187B

- **Multiply fractions by other fractions using physical models, ratio/rate tables, and arrays**

Topic 8: 190A-191B

- **Connect multiplication by a unit fraction (such as $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{100}$) to division by its multiplicative inverse (3, 4, 5, 10, 100) using models**

Topic 8: 202, 203, 203B

- **Add and subtract fractions with unlike denominators and use physical models to justify your answer**

Topic 7: 166A-169B

- **Calculate the decimal equivalent of fractions**

Topic 6: 146A-147B, 150A-153B

Topic 10: 229

Topic 14: 348A-349B, 350A-351B

- **Use benchmark percents to solve problems**

Topic 14: 352A-353B, 354A-357B, 362A-363B

- **Explain the role of place value in adding and subtracting decimals**

Topic 3: 64A-65B

- **Multiply decimals to solve real-world problems (e.g., find the cost of 3 1/2 pounds of grapes at \$1.95 per pound)**

Topic 1: 18A-21B

Topic 3: 70A-73B

- **Describe in which situations an estimate is preferable and in which situations the exact answer is required**

Topic 3: 62A-63B, 66A-69B

Topic 7: 170A-171B

Topic 8: 188A-189B

Topic 9: 208A-209B

Topic 14: 352A-353B

Topic 16: 411

- **Select and use appropriate methods and tools for computing (e.g., mental computation, estimation, calculators, paper, and pencil) depending on the context and nature of the computation**

Topic 1: 18A-21B

Topic 2: 42A-45B

Topic 3: 62A-63B, 64A-65B, 66A-69B, 70A-73B, 74A-75B, 84A-87B

Topic 7: 162A-163B, 166A-169B, 170A-171B

Topic 8: 186A-187B, 188A-189B, 190A-191B

Topic 9: 202A-203B, 204A-205B, 206A-207B, 208A-209B

Topic 10: 230A-233B, 234A-237B, 238A-239B, 240A-241B

Topic 14: 352A-353B

Standard 2 (6–11) – Algebraic Reasoning: Students will develop Algebraic Reasoning and an understanding of Patterns and Functions by solving problems in which there is a need to recognize and extend a variety of patterns; to progress from the concrete to the abstract using physical models, equations, and graphs; to describe, represent, and analyze relationships among variable quantities; and to analyze, represent, model, and describe real-world functional relationships.

Building upon the K–5 expectations, all students in Grade 6 will be able to:

Patterns and change:

- **Use an expression or rule to describe patterns of change in numeric and geometric patterns**

Topic 2: 48A-49B, 50A-53B

Topic 9: 214A-215B

Topic 11: 290A-291B

Topic 15: 376A-377B, 378A-379B

Representations:

- **Demonstrate that a given situation may be represented by a table, graph or equation**

Topic 2: 48A-49B, 50A-53B

Topic 7: 178A-179B

Topic 9: 214A-215B

Topic 11: 290A-291B

Topic 15: 376A-377B, 378A-379B, 380A-381B, 382A-385B

- **Explore informal methods to model and solve real-world situations that involve equivalent fractions (e.g., use a table of equivalent ratios to solve proportional reasoning problems)**

Topic 5: 132A-133B

Topic 12: 302B, 302, 303, 304, 305B

Topic 13: 322A-323B

- **Create a table and scatter plot to represent the relationship between two variables**

Topic 19: 488, 489, 489B

Symbols:

- **Use inverse operations to "do and undo" number sentences**

Topic 4: 98A-101B, 102A-105B, 106A-109B, 110A-113B

Topic 9: 212A-213B

Topic 10: 242A-245B

Topic 15: 372A-375B

Standard 3 (6–11) – Geometric Reasoning: Students will develop Geometric Reasoning and an understanding of Geometry and Measurement by solving problems in which there is a need to recognize, construct, transform, analyze properties of, and discover relationships among geometric figures; and to measure to a required degree of accuracy by selecting appropriate tools and units.

Building upon the K–5 expectations, all students in Grade 6 will be able to:

Classification:

- **Estimate, measure, and classify angles**

Topic 11: 266A-269B, 270A-273B

- **Identify geometric relationships in the real world (e.g., parallel lines, perpendicular lines, etc.)**

Topic 11: 262A, 264, 264B, 270B, 270, 271, 272

- **Explore the measure of a single angle and find the sum of the angles of a regular polygon**

Topic 11: 274A-277B, 278A-281B

Location and transformation:

- **Measure angles and sides to demonstrate that transformations such as reflections (flips), translations (slides), and rotations (turns) maintain congruence**

Topic 11: 284A-287B

- **Identify the properties of shapes that tile a plane**

Topic 11: 287

Measurement:

- **Use the conceptual knowledge of the area of rectangles to develop formulas for the areas of triangles and parallelograms**

Topic 17: 430A-433B, 434A-437B

- **Demonstrate an understanding that the perimeters of rectangles with a fixed area can vary**

See related concepts and skills.

Topic 17: 426A-429B, 430A-433B

Also see Grade Four.

Topic 14: 334A-335B

- **Demonstrate an understanding that the areas of rectangles with a fixed perimeter can vary**

See related concepts and skills.

Topic 17: 426A-429B, 430A-433B

Also see Grade Four.

Topic 14: 332A-333B

- **Find the ratio of the circumference to the diameter of a circular objects to obtain an estimate of π**

Topic 17: 438A-441B

- **Use an angle ruler or protractor to measure angles**

Topic 11: 266A-269B, 270B

- **Sketch a geometric figure given the measure of turn angles and the length of sides**

Topic 11: 274, 278, 281B

- **Find the circumference of circles and explore finding the area**

Topic 17: 438A-441B, 442A-443B, 447

Standard 4 (6–11) – Quantitative Reasoning: Students will develop Quantitative Reasoning and an understanding of Data Analysis and Probability by solving problems in which there is a need to collect, appropriately represent, and interpret data; to make inferences or predictions and to present convincing arguments; and to model mathematical situations to determine the probability.

Building upon the K–5 expectations, all students in Grade 6 will be able to:

Collect:

- **Collect and organize numerical (whole number or decimal) data in order to answer a question**

Topic 2: 48A-49B, 50A-53B

Topic 19: 476A-479B, 480, 483, 483B, 486, 487, 488A-489B, 494A-497B, 498A-499B, 502A-505B

Represent:

- **Construct displays of data (e.g., circle graphs, scatter plots, frequency counts) for a single data set**

Topic 19: 476A-479B, 480, 483, 483B, 486, 487, 488A-489B, 494A-497B, 498A-499B, 502A-505B

Analyze:

- **Defend conclusions drawn from the interpretation of data by comparing one data set to another**

Topic 7: 178A-179B

Topic 19: 476A-479B, 487, 489, 489B

- **Find and use summary measures of center (mean, median, mode) and spread (range) to compare sets of single variable data**

Topic 19: 490A-493B, 500A-501B

Probability:

- **Use real-world data to estimate the probability of future events (e.g., batting averages, weather predictions)**

Topic 20: 530A-533B

- **Analyze simple game to determine favorable outcomes and chances of winning or losing.**

See related concepts and skills.

Topic 20: 528A-529B, 530A-533B

Standard 5, 6, 7, and 8 – Process Standards

Standard 5 – Problem Solving: Students will develop their Problem Solving ability by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

All students in grades K–12 will be able to:

- **Build new mathematical knowledge**

Topic 1: 24A-25B

Topic 2: 50A-53B

Topic 3: 84A-87B

Topic 4: 102A-105B, 110A-113B

Topic 5: 136A-137B

Topic 6: 154A-155B

Topic 7: 178A-179B

Topic 8: 194A-195B

Topic 9: 214A-215B

Topic 10: 250A-253B

Topic 11: 290A-291B

Topic 12: 314A-315B

Topic 14: 362A-363B

Topic 15: 390A-391B

Topic 16: 418A-419B

Topic 17: 444A-447B

Topic 18: 466A-469B

Topic 19: 488A-489B, 510A-511B

Topic 20: 536A-537B

- **Solve problems that arise in mathematics and in other contexts**

Topic 1: 24A-25B

Topic 2: 50A-53B

Topic 3: 84A-87B

Topic 4: 102A-105B, 110A-113B

Topic 5: 136A-137B

Topic 6: 154A-155B

Topic 7: 178A-179B

Topic 8: 194A-195B

Topic 9: 214A-215B

Topic 10: 250A-253B

Topic 11: 290A-291B

Topic 12: 314A-315B

• Solve problems that arise in mathematics and in other contexts (Continued)**Topic 14:** 362A-363B**Topic 15:** 390A-391B**Topic 16:** 418A-419B**Topic 17:** 444A-447B**Topic 18:** 466A-469B**Topic 19:** 488A-489B, 510A-511B**Topic 20:** 536A-537B**• Apply and adapt a variety of appropriate strategies to solve problems****Topic 1:** 24A-25B**Topic 2:** 50A-53B**Topic 3:** 84A-87B**Topic 4:** 102A-105B, 110A-113B**Topic 5:** 136A-137B**Topic 6:** 154A-155B**Topic 7:** 178A-179B**Topic 8:** 194A-195B**Topic 9:** 214A-215B**Topic 10:** 250A-253B**Topic 11:** 290A-291B**Topic 12:** 314A-315B**Topic 14:** 362A-363B**Topic 15:** 390A-391B**Topic 16:** 418A-419B**Topic 17:** 444A-447B**Topic 18:** 466A-469B**Topic 19:** 488A-489B, 510A-511B**Topic 20:** 536A-537B**• Monitor and reflect on the process of mathematical problem solving****Topic 1:** 24A-25B**Topic 2:** 50A-53B**Topic 3:** 84A-87B**Topic 4:** 102A-105B, 110A-113B**Topic 5:** 136A-137B**Topic 6:** 154A-155B**Topic 7:** 178A-179B**Topic 8:** 194A-195B**Topic 9:** 214A-215B**Topic 10:** 250A-253B

- **Monitor and reflect on the process of mathematical problem solving (Continued)**

Topic 11: 290A-291B

Topic 12: 314A-315B

Topic 14: 362A-363B

Topic 15: 390A-391B

Topic 16: 418A-419B

Topic 17: 444A-447B

Topic 18: 466A-469B

Topic 19: 488A-489B, 510A-511B

Topic 20: 536A-537B

Standard 6 – Reasoning and Proof: Students will develop their Reasoning and Proof ability by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

All students in grades K–12 will be able to:

- **Understand that reasoning and proof are fundamental aspects of mathematics**

Topic 1: 24A-25B

Topic 2: 50A-53B

Topic 5: 136A-137B

Topic 7: 178A-178B

Topic 9: 214A-215B

Topic 11: 290A-291B

Topic 13: 330A-333B

Topic 14: 362A-363B

Topic 15: 390A-391B

Topic 16: 418A-419B

Topic 18: 466A-469B

Topic 19: 510A-511B

Topic 20: 536A-537B

- **Make and investigate mathematical conjectures**

Topic 5: 136A-137B

Topic 19: 510A-511B

- **Develop and evaluate mathematical arguments and proofs**

Topic 1: 24A-25B

Topic 5: 136A-137B

Topic 19: 510A-511B

- **Select and use various types of reasoning and methods of proof**

Topic 1: 24A-25B

Topic 2: 50A-53B

Topic 5: 136A-137B

Topic 7: 178A-178B

Topic 9: 214A-215B

Topic 11: 290A-291B

- **Select and use various types of reasoning and methods of proof (Continued)**

Topic 13: 330A-333B

Topic 14: 362A-363B

Topic 15: 390A-391B

Topic 16: 418A-419B

Topic 18: 466A-469B

Topic 19: 510A-511B

Topic 20: 536A-537B

Standard 7 – Communication: Students will develop their mathematical Communication ability by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral, and visual formats.

All students in grades K–12 will be able to:

- **Organize and consolidate their mathematical thinking through communication**

Topic 1: 9

Topic 2: 33

Topic 3: 67

Topic 4: 97

Topic 5: 121

Topic 6: 147

Topic 7: 173

Topic 8: 193

Topic 9: 203

Topic 10: 225

Topic 11: 272

Topic 12: 309

Topic 13: 328A-329B

Topic 14: 351

Topic 15: 374

Topic 16: 409

Topic 17: 433

Topic 18: 465

Topic 19: 492

Topic 20: 529

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others**

Topic 1: 7B

Topic 2: 45B

Topic 3: 69B

Topic 4: 97B

Topic 5: 123B

Topic 6: 155B

Topic 7: 177B

Topic 8: 195B

Topic 9: 208B

Topic 10: 230B

- **Communicate their mathematical thinking coherently and clearly to peers, teachers, and others (Continued)**

Topic 11: 266B

Topic 12: 308B

Topic 13: 328B

Topic 14: 347B

Topic 15: 378B

Topic 16: 417B

Topic 17: 434B

Topic 18: 458B

Topic 19: 493B

Topic 20: 527B

- **Analyze and evaluate the mathematical thinking and strategies of others**

Topic 1: 7B

Topic 2: 45B

Topic 3: 69B

Topic 4: 97B

Topic 5: 123B

Topic 6: 155B

Topic 7: 177B

Topic 8: 195B

Topic 9: 208B

Topic 10: 230B

Topic 11: 266B

Topic 12: 308B

Topic 13: 328B

Topic 14: 347B

Topic 15: 378B

Topic 16: 417B

Topic 17: 434B

Topic 18: 458B

Topic 19: 493B

Topic 20: 527B

- **Use the language of mathematics to express mathematical ideas precisely**

Topic 1: 9

Topic 2: 33

Topic 3: 67

Topic 4: 97

Topic 5: 121

Topic 6: 147

Topic 7: 173

Topic 8: 193

Topic 9: 203

Topic 10: 225

Topic 11: 272

Topic 12: 309

Topic 13: 328A-329B

- **Use the language of mathematics to express mathematical ideas precisely (Continued)**

Topic 14: 351

Topic 15: 374

Topic 16: 409

Topic 17: 433

Topic 18: 465

Topic 19: 492

Topic 20: 529

Standard 8 – Connections: Students will develop mathematical Connections by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

All students in grades K–12 will be able to:

- **Recognize and use connections among mathematical ideas**

Topic 1: 13

Topic 2: 48A-49B

Topic 3: 73

Topic 4: 98A-99B

Topic 5: 131

Topic 6: 153

Topic 7: 169

Topic 8: 193B

Topic 9: 202A-203B

Topic 10: 245

Topic 11: 284A-287B

Topic 12: 306A-307B

Topic 13: 324A-325B

Topic 14: 357

Topic 15: 375

Topic 16: 412A-413B

Topic 17: 429

Topic 18: 461

Topic 19: 479

Topic 20: 527

- **Understand how mathematical ideas interconnect and build on one another to produce a coherent whole**

Topic 1: 13

Topic 2: 48A-49B

Topic 3: 73

Topic 4: 98A-99B

Topic 5: 131

Topic 6: 153

Topic 7: 169

Topic 8: 193B

Topic 9: 202A-203B

Topic 10: 245

• Understand how mathematical ideas interconnect and build on one another to produce a coherent whole (Continued)

Topic 11: 284A-287B

Topic 12: 306A-307B

Topic 13: 324A-325B

Topic 14: 357

Topic 15: 375

Topic 16: 412A-413B

Topic 17: 429

Topic 18: 461

Topic 19: 479

Topic 20: 527

• Recognize and apply mathematics in contexts outside of mathematics

Topic 1: 3

Topic 2: 45

Topic 3: 83

Topic 4: 95

Topic 5: 119

Topic 6: 143

Topic 7: 161

Topic 8: 185

Topic 9: 201

Topic 10: 221

Topic 11: 261

Topic 12: 299

Topic 13: 321

Topic 14: 343

Topic 15: 371

Topic 16: 399

Topic 17: 425

Topic 18: 453

Topic 19: 475

Topic 20: 519