

A Correlation of

**SCOTT FORESMAN ■ ADDISON WESLEY**

# **Mathematics**

to the

## **Maryland Mathematics Voluntary State Curriculum Grades K-6**



**O/M-153**

## Introduction

This document demonstrates the high degree of success students will achieve when using **Scott Foresman – Addison Wesley Mathematics** in meeting the objectives of the Maryland Mathematics Voluntary State Curriculum. Correlation page references are to the Teacher Edition, which contains facsimile Pupil Edition pages.

**Note: Maryland’s highlighted Assessment Limits will be tested in the no calculator section of MSA**

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

### Reaching All Learners

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

### Test Prep

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

#### Priority on problem solving:

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

#### Instructional Support

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

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

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**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Kindergarten**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify and copy numeric patterns**

***Objectives(s):***

- **Use manipulatives with numeric qualities to build patterns**  
25J, 75J, 95A-95B, 113A-113B, 218, 233A-233B, 285J, 287A-287B

***Indicator Statement:***

**Identify, copy, describe, create, and extend non-numeric patterns**

***Objectives(s):***

- **Represent patterns kinesthetically such as: clap/snap/clap**  
35A-35B, 41B, 43A, 44, 80, 95B, 126
- **Represent and analyze repeating patterns using no more than 3 objects in the core of the pattern**  
36, 37A-37B, 38, 39A-39B, 40, 41A-41B, 41-42, 43A-43B, 43-44, 45A-45B, 45-46, 48, 50, 108
- **Sort a collection of objects according to a rule**  
183B, 187B, 259A-259B
- **Identify patterns in real life situations**  
35B, 37B, 41B, 43B, 45A
- **Recognize the difference between patterns and non-patterns**  
37B, 39A, 43B, 45A

- **Continue patterns**  
18, 25J, 35A-35B, 35-36, 37A-37B, 37-38, 39A-39B, 39-40, 45B, 50, 54, 95A,-  
95B, 98, 108, 126, 134, 164, 226, 292

## EXPRESSIONS, EQUATIONS, AND INEQUALITIES

### *Indicator Statement:*

Write and identify expressions

### *Objectives(s):*

- **Represent numeric quantities using concrete and pictorial representations to model addition expressions with a value of no more than 10**  
251A-251B, 252

### *Indicator Statement:*

Identify equations and inequalities

### *Objectives(s):*

- **Represent relationships by comparing groups of no more than 10 objects to determine more or less**  
29A-29B, 29-30, 31A-31B, 31-32, 40, 44, 47B, 47, 51J, 63A-63B, 67A-67B, 67-  
68, 71A-71B, 75J, 87A-87B, 88, 89A-89B, 239B
- **Model and name the value of the missing part in a part-part-whole situation using no more than 10 manipulatives**  
70, 152
- **Describe addition using terms such as: and, add, plus, join, equal**  
243I, 243, 245A-245B, 245-246, 247A-247B, 247-248, 249A-249B, 249-250, 251-  
251B, 251-252, 253A-253B, 253-254, 255A-255B, 257A-257B, 259A-259B, 259-  
260, 261-262

## NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS

### *Indicator Statement:*

Locate points on a number line

### *Objectives(s):*

- **Identify and represent whole numbers up to 10 on a number line using manipulatives, symbols, and one-to-one correspondence**  
91A-91B, 91

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES*****Indicator Statement:***

**Recognize and describe the attributes of plane geometric figures**

***Objectives(s):***

- **Sort and regroup everyday objects and geometric figures according to attributes such as: shape, color, size**  
1J, 15A-15B, 15-16, 17A-17B, 19B, 22, 24, 28, 148, 203B, 206, 259A-259B, 260
- **Describe plane figures and their attributes such as: shape, color, size**  
17A, 203A-203B, 205A-205B, 219B, 219
- **Identify triangles, circles, squares, and rectangles**  
17A, 66, 104, 148, 172, 203A-203B, 203-204, 205B, 205, 208, 219B, 219, 221, 292
- **Compare, trace, and reproduce triangles, circles, squares, and rectangles**  
1J, 4, 203B, 205A-205B, 210

**SOLID GEOMETRIC FIGURES*****Indicator Statement:***

**Recognize, describe, and use the attributes of solid geometric figures**

***Objectives(s):***

- **Match, sort, and regroup objects according to attributes**  
1I, 13A-13B, 17B, 19B, 24, 31B, 71A, 110, 183B, 187B, 197A-197B, 197-198, 199A-199B, 248
- **Describe solid figures**  
17B, 195I, 197A-197B, 199A-199B, 199-200, 201A-201B, 201-202, 219A
- **Identify solid geometric figures in the environment**  
1I, 195I, 197A-197B, 197-198, 219A, 221, 248

**CONGRUENCE*****Indicator Statement:*****Recognize congruent objects*****Objectives(s):***

- **Identify everyday objects which have the same size and shape**  
197A-197B

**TRANSFORMATIONS*****Indicator Statement:*****Begin to recognize a transformation*****Objectives(s):***

- **Use position words such as: over, under, above, on, next to, below, beside, behind**  
3A-3B, 3-4, 5A-5B, 5-6, 7A-7B, 7-8, 9A-9B, 9-10, 21A-21B, 23, 30, 38, 46
- **Use spatial reasoning to solve simple puzzles**  
92, 158, 180, 209A-209B, 209-210, 270
- **Demonstrate slides using simple objects**  
195J, 207A-207B, 207-208

***Indicator Statement:*****Recognize symmetry*****Objectives(s):***

- **Recognize the concept of symmetry using pictures**  
195, 211A-211B, 211-212, 222

**STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:**

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

**MEASUREMENT SCALES*****Indicator Statement:***

**Explore measurement scales**

***Objectives(s):***

- **Order, compare, and describe objects by attributes such as: length/height, weight, capacity**  
106, 131I-131J, 131K, 131, 133A-133B, 135A-135B, 137A-137B, 149A-149B, 155A-155B
- **Recognize time by identifying days of the week and by using terms such as: yesterday, today, tomorrow, morning, afternoon, night, before, after**  
72, 159I-159J, 161A-161B, 161-162, 163A-163B, 163-164, 169A-169B, 169-170, 171A-171B, 171-172, 191A-191B
- **Compare and describe temperature such as: temperature in January as compared to temperature in July**  
60, 142, 153A-153B, 153-154, 158

**MEASUREMENT TOOLS*****Indicator Statement:***

**Measure in non-standard units**

***Objectives(s):***

- **Measure length of objects and pictures of objects**  
88, 131L, 139A-139B, 139-140, 141A-141B, 141-142, 157
- **Explore and compare the capacity of containers**  
82, 131L, 145A-145B, 145-146, 147A-147B, 147-148, 150, 155A-155B, 158, 204, 274
- **Explore and compare objects according to their weight using a two-pan balance**  
131K, 151A-151B, 151-152



**STANDARD 4.0—KNOWLEDGE OF STATISTICS:**

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

**DATA DISPLAYS*****Indicator Statement:***

**Collect, organize, and display data**

***Objectives(s):***

- **Collect data by answering a question**  
33A-33B, 33-34, 47A-47B, 168
- **Organize and display data to make real graphs**  
29A-29B, 29-30, 47B, 67A-67B, 67-68
- **Organize and display data to make picture graphs**  
31A-31B, 31-32, 47A-47B

**DATA ANALYSIS*****Indicator Statement:***

**Analyze data**

***Objectives(s):***

- **Compare and describe data from real graphs to answer a question**  
29A-29B, 29-30, 47B, 67A-67B
- **Compare and describe data from a picture graph to answer a question**  
31A-31B, 31-32, 47A-47B, 47, 49, 56, 122, 238, 300

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR COMPUTATION:**

Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE*****Indicator Statement:***

**Apply knowledge of whole numbers and place value**

***Objectives(s):***

- **Extend concept of number**  
14, 65A-65B, 75J, 77A-77B, 79A-79B, 81A, 83A-83B, 87A-87B, 89A-89B, 123A-123B, 123-124, 179A-179B, 189B, 285I-285J, 289A-289B, 289-290, 291-292, 293A-293B, 293-294, 297A-297B, 297-298, 301-302
- **Construct relationships between and among quantities using language such as: more than, less than, fewer than, as many as, one more, one less**  
25I, 27A-27B, 27-28, 62, 63A-63B, 63-64, 67A-67B, 67-68, 71A-71B, 71-72, 74, 75, 77A-77B, 79A-79B, 81A-81B, 83A, 85A, 87A-87B, 87-88, 89A-89B, 90, 94, 97B, 99, 101, 103A, 107B, 111A, 120, 121A-121B, 202, 210, 223J, 235A-235B, 235-236, 237A-237B, 237-238, 239B, 240, 242, 269A-269B, 269-270, 283, 294, 296
- **Demonstrate cardinality by answer of how many**  
51I, 53A-53B, 53-54, 55A-55B, 57A-57B, 60, 63-64, 65-66, 73-74, 75I, 77B, 78, 81-82, 84, 85B, 85-86, 87-88, 89A-89B, 97B, 100, 101I-101J, 103A-103B, 105-106, 107-108, 109-110, 111B, 111-112, 113A-113B, 236, 299-300, 301
- **Build meaningful relationships by using 5 and 10 frames**  
77A-77B, 77, 79A-79B, 79, 81A, 83A-83B, 83, 85A, 89A-89B, 103A-103B, 103-104, 105A-105B, 107A-107B, 109A, 111A, 115A-115B, 115-116, 231A, 235B, 277B
- **Use concrete materials to build sets 0 to 10**  
51I, 53A-53B, 55, 57A-57B, 57, 59A-59B, 59, 65A-65B, 75I, 77A-77B, 77, 79A-79B, 79, 81A-81B, 83, 86, 88, 89A-89B
- **Use concrete materials to compose and decompose quantities up to 10**  
223I, 223K-223L, 225A-225B, 225-226, 227A-227B, 229A-229B, 231A-231B, 233A-233B, 239A

- **Match a numeral to a set**  
14, 55A-55B, 55, 59A-59B, 59-60, 61A-61B, 61-62, 63-64, 65A-65B, 65-66, 71A-71B, 71-72, 73-74, 81A-81B, 81-82, 84, 85A-85B, 85-86, 87-88, 89A, 89-90, 97B, 100, 105A-105B, 105-106, 107A-107B, 107-108, 109A-109B, 109-110, 111A-111B, 111-112, 210, 233-234, 241, 285I
- **Count to 31**  
101K-101L, 115A-115B, 127B
- **Count backward from 10**  
83A, 91B
- **Use ordinal numbers to indicate position such as: first, second, third, fourth, fifth**  
51L, 69A-69B, 69-70, 73, 78, 93A-93B, 98, 144, 268

**Indicator Statement:**  
Recognize fractions

**Objectives(s):**

- **Show initial awareness of fractional parts (halves) using concrete materials**  
213B, 213-214, 215A-215B, 215-216, 222

**Indicator Statement:**  
Recognize and use money

**Objectives(s):**

- **Identify and name the value of pennies, nickels, and dimes**  
159K, 179A-179B, 179-80, 181A, 181, 183A-183B, 193, 200
- **Choose the coin named from a given set of mixed coins**  
184, 187B
- **Use money in real-world situations such as a classroom store**  
185A-185B, 189A, 243J, 257B, 277B

**NUMBER COMPUTATION*****Indicator Statement:***

Analyze number relations and compute

***Objectives(s):***

- **Model addition by combining sets of concrete objects and describe the results using words and pictures**  
223, 243I, 243, 245B, 245-246, 247A-247B, 249B, 253B, 254, 256, 257A-257B, 259A-259B, 260
- **Model subtraction by separating sets of concrete objects and describe the results using words and pictures**  
263I-263J, 265A-265B, 265-266, 267A-267B, 267, 271A-271B, 273A-273B, 275A-275B, 277B, 281A-281B, 282
- **Solve a given story problem cooperatively that is based on the combining and separating of models**  
243J, 245A, 249B, 255A, 265A-265B, 273A, 281A

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING*****Indicator Statement:***

Apply a variety of concepts, processes, and skills to solve problems

***Objectives(s):***

- **Identify the question in the problem**  
279A-279B, 280
- **Decide if enough information is present to solve the problem**  
Opportunity to meet this objective can be found in the “Investigation” activities and “Problem-Solving Strategy” lessons in each Chapter.
- **Make a plan to solve a problem**  
97A, 263I-263J, 279A-279B, 279-280

- **Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
1I-1J, 19A-19B, 47A-47B, 47-48, 67A-67B, 67-68, 71A-71B, 71-72, 95A-95B, 95-96, 97A-97B, 125A-125B, 125-126, 127A-127B, 127-128, 143A-143B, 143-144, 155A-155B, 155-156, 191A-191B, 217A-217B, 217-218, 219A-219B, 219-220, 233A-233B, 233-234, 239A-239B, 239-240, 281A-281B, 281-282, 299A-299B, 299-300
- **Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
1I-1J, 6, 51I-51J, 75J, 131I-131J, 243I, 263I-263J, 279A-279B
- **Identify alternative ways to solve a problem**  
51J, 53A, 75I, 113A, 131J, 243I, 263I-263J
- **Show that a problem might have multiple solutions or no solution**  
15A-15B, 16, 57A, 141B, 181A, 183A-183B, 185A, 223I, 239A, 259A
- **Extend the solution of a problem to a new problem situation**  
75I-75J, 127A, 139B, 195I, 243I-243J, 263I, 285I-285J

## REASONING

### *Indicator Statement:*

Justify ideas or solutions with mathematical concepts or proofs

### *Objectives(s):*

- **Use inductive or deductive reasoning**  
11B, 17A, 19A-19B, 19-20, 22, 24, 87A, 89A, 91B, 133A, 145B, 147A, 153A, 154, 165A, 166, 189A, 199A, 243I
- **Make or test generalizations**  
17A, 19A-19B, 19-20, 22, 24, 103A, 163A, 169A, 201A, 205A
- **Support or refute mathematical statements or solutions**  
95A, 113A, 125A, 145A, 149A
- **Use methods of proof, i.e., direct, indirect, paragraph, or contradiction**  
53A, 111A, 115A-115B, 259A

**COMMUNICATION****Indicator Statement:**

**Present mathematical ideas using words, symbols, visual displays, or technology**

**Objectives(s):**

- **Use multiple representations to express concepts or solutions**  
1I-1J, 16, 25I, 41A-41B, 43A-43B, 43-44, 45-46, 56, 60, 73, 75I, 108, 110, 112, 114, 118, 223I, 252, 271A, 272
- **Express mathematical ideas orally**  
1I-1J, 8, 21A-21B, 25J, 51I-51J, 83B, 131I-131J, 159I-159J, 185B, 195I-195J, 223I-223J, 243I-243J, 263I-263J
- **Explain mathematically ideas in written form**  
131I-131J
- **Express solutions using concrete materials**  
1I-1J, 25I, 27A, 29A-29B, 29-30, 51J, 58, 70, 97A-97B, 101I-101J, 108, 131I, 137A-137B, 139A-139B, 141A-141B, 143A-143B, 146, 195I, 217A-217B, 217-218, 220, 225A-225B, 227A-227B, 229A-229B, 230, 231A-231B, 233A-233B, 263I, 267A-267B, 269A-269B, 285I-285J
- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
1I-1J, 16, 22, 25I, 28, 57, 64, 137, 184, 186, 190, 195J, 223, 243I-243J, 246, 255A-255B, 255-256, 270, 271A-271B, 271-272, 273A-273B, 273-274, 275A-275B, 275-276, 279-280, 281A-281B, 281-282, 284
- **Explain solutions in written form**  
131I-131J
- **Ask questions about mathematical ideas or problems**  
47B
- **Give or use feedback to revise mathematical thinking**  
143A-143B, 143-144, 145B

## CONNECTIONS

### **Indicator Statement:**

Relate or apply mathematics within the discipline, to other disciplines, and to life

### **Objectives(s):**

- **Identify mathematical concepts in relationship to other mathematical concepts**  
83A, 119A, 122, 133A, 155A-155B, 195I, 201A-201B, 201-202, 221, 273A, 279A-279B, 291A-291B, 295A-295B, 298, 299A
- **Identify mathematical concepts in relationship to other disciplines**  
1K-1L, 3B, 5B, 7B, 11B, 13B, 21B, 25K-25L, 51K-51L, 53B, 55B, 59B, 65A, 69B, 75K-75L, 77B, 79B, 83B, 85B, 91B, 93B, 97B, 101K-101L, 103B, 105B, 107B, 109B, 111B, 117B, 121B, 191B, 195K-195L, 205B, 207B, 211B, 217B, 223K-223L, 225B, 227B, 229B, 231B, 237B, 239B, 243K-243L, 245B, 247B, 255B, 263K-263L, 265B, 269B, 271B, 275B, 279B, 285K-285L
- **Identify mathematical concepts in relationship to life**  
1, 9B, 25, 33A-33B, 33-34, 47A-47B, 51L, 64, 87B, 97B, 97, 101, 131, 133A, 138, 153A-153B, 153-154, 155-156, 159J, 159K-159L, 163B, 164, 165A-165B, 166, 168, 169B, 169-170, 171A-171B, 171-172, 177B, 177-178, 191A-191B, 194, 217B, 257B
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
41A-41B, 41-42, 43A-43B, 43-44, 50, 203B, 285J

**Scott Foresman – Addison Wesley Mathematics  
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**Grade One**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns/**

***Objectives(s):***

- **Represent and analyze numeric patterns using skip counting by multiples of 2 and 10 starting with any whole number, and using manipulatives and the 100 chart**  
239I, 243A-243B, 243-244, 253, 255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 262, 267A, 269A-269B, 271, 273-274, 278, 335B, 337A-337B, 461A-461B, 461-462, 486, 491
- **Represent and analyze numeric patterns using skip counting backward by 10s starting with a multiple of 10, and using manipulatives**  
243B, 473A-473B, 473-474, 485, 491, 492A

***Indicator Statement:***

**Identify, copy, describe, create and extend non-numeric patterns**

***Objectives(s):***

- **Represent and analyze growing patterns kinesthetically such as: clap/snap, clap/snap/snap, clap/snap/snap/snap, ...**  
3A, 33B
- **Represent and analyze repeating patterns using no more than 3 different objects in the core of the pattern**  
1I, 3B, 3-4, 7A-7B, 7-8, 9-10, 33A-33B, 33-34, 41, 74, 88A, 166, 194, 243A, 270
- **Transfer a repeating pattern from one medium to a different medium using no more than 3 different objects in the core of the pattern**  
5A-5B, 5-6, 24, 154A



- **Identify patterns in real-world situations**  
3B, 5B, 7B, 7-8, 9

## **EXPRESSIONS, EQUATIONS, AND INEQUALITIES**

### ***Indicator Statement:***

**Write and identify expressions**

### ***Objectives(s):***

- **Represent numeric quantities using concrete and pictorial representations and operational symbols (+, -) with whole numbers to 20**  
47A-47B, 48, 49A-49B, 49-50, 51A-51B, 51-52, 53A-53B, 54, 58, 59-60, 62, 63-64, 65-66, 67-68, 69A-69B, 69-70, 73-74, 77-78, 81, 87, 88A-88B, 102, 107A-107B, 107-108, 115-116, 122, 130, 136, 138, 140, 218, 306, 414A, 415A, 418, 433, 449, 450, 455

### ***Indicator Statement:***

**Identify, write, and solve equations and inequalities**

### ***Objectives(s):***

- **Represent relationships using the terms greater than, less than, and equal to for quantities up to 100**  
29B, 29-30, 35-36, 42, 102, 297A-297B, 297-298, 322, 328A, 354, 408
- **Find the missing number (unknown) in a number sentence using operational symbols (+, -) with whole numbers to 20 using pictures and manipulatives**  
53-54, 59-60, 69-70, 83, 87, 108, 154A, 180, 254, 322

## **NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS**

### ***Indicator Statement:***

**Locate points on a number line**

### ***Objectives(s):***

- **Identify and represent whole numbers up to 50 on a number line using manipulatives and symbols**  
97A-97B, 97-98, 121, 125A-125B, 125-126, 135, 139A, 148, 151, 153, 154B, 238B, 466, 478

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES*****Indicator Statement:***

**Recognize and apply the properties/attributes of plane geometric figures**

***Objectives(s):***

- **Identify, name, and compare triangles, circles, squares, rectangles, and rhombi by their attributes**  
7A, 31A, 133A, 155I, 165A-165B, 165-166, 167A-167B, 167-168, 177A, 179, 193B, 196, 201-202, 373A, 477A
- **Create models of triangles, circles, squares, and rectangles with varied materials**  
165B, 193B
- **Combine and subdivide squares and triangles**  
177A-177B, 177-178, 179

**SOLID GEOMETRIC FIGURES*****Indicator Statement:***

**Recognize and use the attributes of solid geometric figures**

***Objectives(s):***

- **Identify and compare cubes, spheres, cylinders, pyramids, cones, and rectangular prisms**  
111A, 157A-157B, 157-158, 159A-159B, 159-160, 163, 180, 193A-193B, 193-194, 201, 229, 238A

**CONGRUENCE*****Indicator Statement:***

**Identify congruent figures**

***Objectives(s):***

- **Match congruent figures**  
162, 169A-169B, 169-170, 179, 202, 238B

## TRANSFORMATIONS

### *Indicator Statement:*

Recognize a transformation

### *Objectives(s):*

- **Use the direction, location, and position words right and left**  
173A-173B, 315A-315B, 315-316, 317A-317B, 317-318, 321, 328, 400, 437A
- **Apply spatial reasoning in activities such as: pattern block**  
177A-177B, 177-178, 179, 379A-379B, 379-380, 381, 413
- **Identify and demonstrate slides and flips using manipulatives**  
173A-173B

### *Indicator Statement:*

Recognize and demonstrate symmetry

### *Objectives(s):*

- **Demonstrate symmetry in basic shapes and pictures by paper folding and drawing a line of symmetry**  
171A-171B, 171-172, 179, 202, 382, 414B

## STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

## MEASUREMENT SCALES

### *Indicator Statement:*

Read measurement scales

### *Objectives(s):*

- **Read a calendar to identify days of the week and months of the year**  
17A, 51A, 225A-225B, 225-226, 227A-227B, 227-228, 229A, 230, 231, 237, 238B, 265A, 272, 434
- **Tell time in intervals of hours and half-hours using an analog clock**  
5A, 207A-207B, 207-208, 211A-211B, 211-212, 223, 306, 400
- **Compare the same time on analog and digital clocks**  
209A-209B, 209-210, 217, 229-230, 237, 238A, 322

- **Read a thermometer to tell temperature to the nearest 10° F**  
397A-397B
- **Compare and order objects by weight on a two-pan balance**  
389A-389B, 389-390, 391A-391B, 391-392, 412

## MEASUREMENT TOOLS

### *Indicator Statement:*

Measure in customary units

### *Objectives(s):*

- **Measure length of objects and pictures of objects to the nearest inch using a ruler**  
371A-371B, 371-372, 379A, 381, 397A-397B, 400, 409, 413
- **Identify and compare units of capacity using cups and gallons**  
383-384, 385A-385B, 385-386, 397A-397B
- **Compare and order objects by weight in pounds, using a spring scale**  
Opportunity to meet this objective can be found on pages 389A-389B, 391A-391B, 397A-397B
- **Describe the attributes of length, weight, and capacity**  
165A, 363I, 369A, 371A-371B, 383A-383B, 391B, 397A-397B

## STANDARD 4.0—KNOWLEDGE OF STATISTICS:

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

## DATA DISPLAYS

### *Indicator Statement:*

Collect, organize, and display data

### *Objectives(s):*

- **Collect data by conducting surveys**  
309B, 309-310, 406
- **Collect data on tally charts**  
251B, 313A-313B, 313-314, 320, 321, 403-404, 406

- **Organize and display data to make picture graphs**  
69A, 71A, 219A, 251B, 309A-309B, 309-310, 319A, 320
- **Organize and display data to make single bar graphs**  
251A, 311A-311B, 311-312, 435A, 481A-481B, 483A

## DATA ANALYSIS

### *Indicator Statement:*

Analyze data

### *Objectives(s):*

- **Interpret data contained in tables**  
79A, 189A, 191A-191B, 191-192, 195, 218, 223A-223B, 223-224, 231, 235, 238, 254, 261A-261B, 261-262, 315A, 339A-339B, 339-340, 353A, 391A
- **Interpret data contained in picture graphs using a variety of categories with 1:1 intervals**  
29A, 65A, 97A, 143A, 251B, 309A-309B, 309-310, 319A, 321, 356, 414A
- **Interpret data contained in single bar graphs**  
251A, 311A-311B, 311-312, 321, 328, 345A, 445A, 481A-481B, 481-482, 483A

## STANDARD 5.0—KNOWLEDGE OF PROBABILITY:

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

## SAMPLE SPACE

### *Indicator Statement:*

Identify possible outcomes

### *Objectives(s):*

- **Recognize that a real life situation may have more than one outcome such as a coin having heads or tails**  
313A-313B, 363J, 401A-401B, 403A-403B, 407

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE****Indicator Statement:**

**Apply knowledge of whole numbers and place value**

**Objectives(s):**

- **Use concrete materials to compose and decompose quantities up to 20**  
1J, 11A-11B, 13A-13B, 15A-15B, 15-16, 17A-17B, 17-18, 21A-21B, 23-24, 41-42, 339A
- **Identify multiple representations for a number, such as: 12, 6 + 6, dozen**  
11B, 40, 149, 281A-281B, 281-282, 283A-283B, 283-284, 285A-285B, 285-286, 287A-287B, 287-288, 322, 327-328, 328A-328B, 342, 423A-423B, 423-424, 450
- **Demonstrate instant recognition of quantities in patterned sets**  
47B, 53A, 243-244, 461-462
- **Use the numbers of 5 and 10 as anchors in relationship to other numbers**  
29A, 30, 241A-241B, 241-242, 281A-281B, 281-282, 342, 421A-421B, 421-422, 423A-423B, 423-424
- **Read, write, and represent whole numbers up to 100 and beyond using models, symbols, and words**  
239J, 241A-241B, 241-242, 244, 247A-247B, 247-248, 253, 257A, 272, 277, 279I, 281A-281B, 281-282, 283A-283B, 283-284, 285A-285B, 285-286, 287A-287B, 287-288, 293, 303A-303B, 303-304, 305-306, 319B, 319, 322, 327-328, 328A, 328B, 342, 421A-421B, 421-422, 450
- **Express whole numbers up to 99 using expanded form**  
285A-285B, 285-286, 287A-287B, 287-288, 293, 322, 327, 328B
- **Identify the place value of a digit in a whole number up to 99**  
279I, 283A-283B, 283-284, 421A
- **Compare and order whole numbers up to 99 using terms such as: greater than, less than, equal to**  
25A, 29B, 29-30, 31A-31B, 31-32, 33A, 35-36, 42, 75A-75B, 75-76, 77A-77B, 78, 81-82, 102, 263A-263B, 263-264, 278, 279J, 294, 295A-295B, 295-296, 297A-297B, 297-298, 299A-299B, 299-300, 301A-301B, 301-302, 305, 319B, 320, 322, 328, 328A, 342, 354, 408, 467A

- **Estimate quantities up to 50 and use the term "about"**  
249A-249B, 249-250, 253, 272, 467A-467B, 467-468, 469, 92
- **Count to 100**  
239I-239J, 245A, 255A
- **Count forward and backward starting with numbers other than one**  
51B, 245B, 245-246, 253, 277
- **Use ordinal numbers to indicate position: first through tenth**  
267A-267B, 267-268, 269, 301A, 328A, 382

**Indicator Statement:**

Apply knowledge of fractions

**Objectives(s):**

- **Read, write, and represent fractions as parts of a single region using symbols and models with denominators of 2 or 4**  
181A-181B, 181-182, 183A-183B, 183-184, 185A-185B, 185-186, 189B, 189-190, 194, 195, 202, 232, 238A, 431A
- **Read, write, and represent halves as parts of a set using pictures and models**  
155J, 187A-187B, 187-188, 189A, 189-190, 195, 202, 254, 328B

**Indicator Statement:**

Apply knowledge of money

**Objectives(s):**

- **Determine the value of a given set of mixed currency up to \$1**  
331B, 331, 333, 335A-335B, 335-336, 337A-337B, 337-338, 339-340, 341, 345A-345B, 345-346, 348, 351A, 353A, 355, 361-362, 382, 414A, 470, 492B
- **Demonstrate monetary value using real or play coins**  
329I-329J, 331A-331B, 332, 333A-333B, 334, 337B, 338, 339A-339B, 343A-343B, 343-344, 346, 347A-347B, 347-348, 351A-351B, 353B, 353, 355, 361-362, 382, 414B
- **Compare the value of 2 sets of mixed currency up to \$1.00**  
Opportunity to meet this objective can be found on pages 339A-339B, 339-340, 341, 351A-351B, 353A, 361

**NUMBER COMPUTATION****Indicator Statement:**

Analyze number relations and compute

**Objectives(s):**

- **Develop strategies for addition and subtraction basic facts such as: counting on, counting back, making ten, doubles, and doubles plus one**  
89I-89J, 91A-91B, 91-92, 95A-95B, 95-96, 97A-97B, 97-98, 101, 103A-103B, 103-104, 105A-105B, 105-106, 113A-113B, 115-116, 121-122, 123I-123J, 125A-125B, 125-126, 127A-127B, 127-128, 129A-129B, 129-130, 135, 141A-141B, 141-142, 153, 164, 417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 433, 441A-441B, 441-442, 443A-443B, 443-444, 447A, 455
- **Solve a given word problem based on addition or subtraction situation**  
25A, 43I-43J, 45A-45B, 45-46, 47A, 49A-49B, 50, 57A-57B, 57-58, 59-60, 61A-61B, 61-62, 63A-63B, 65A-65B, 67A-67B, 71A-71B, 71-72, 73, 75B, 76, 77B, 79-80, 82, 88, 99A-99B, 99-100, 101-102, 111A-111B, 111-112, 113A, 113-114, 115, 121-122, 129A, 133A-133B, 133-134, 135-136, 137A, 141A, 142, 143A-143B, 143-144, 145A, 145-146, 147, 148, 154, 154B, 157A, 159A, 161A, 164, 167A, 171A, 181A, 183A, 191A, 193A, 215A, 218, 221A, 223A, 225A, 227A, 229, 238A, 245A, 247A, 255A, 261A, 269, 281A, 283A, 285A, 291A-291B, 291-292, 295A, 303A, 317A, 333A, 335A, 337A, 371A, 383A, 385A, 387A, 395A, 401A, 417A, 423A, 425A, 427A-427B, 439A, 441A, 445A-445B, 445-446, 447A, 447-448, 449, 456, 457I, 459A-459B, 461A, 463A-463B, 467A, 471A, 473A, 475A-475B, 481A, 483B, 483-484
- **Identify the concept of inverse operation to addition and subtraction**  
129A-129B, 129-130, 137A-137B, 137-138, 139A-139B, 139-140, 146, 147, 153, 154A-154B, 164, 196, 342, 415J, 435A-435B, 435-436, 437A-437B, 437-438, 439A-439B, 439-440, 449, 456, 470, 486, 492A-492B

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING****Indicator Statement:**

Apply a variety of concepts, processes, and skills to solve problems



**Objectives(s):**

- **Identify the question in the problem**  
39, 45A, 71A, 133A, 133, 177, 199, 261, 291, 431, 467, 481
- **Decide if enough information is present to solve the problem**  
313A
- **Make a plan to solve a problem**  
57A, 71A-71B, 71-72, 73, 88, 89I, 119, 133A, 133, 137A, 143A-143B, 143-144, 147, 177, 209A, 255A, 261, 275, 291, 328B, 333A, 411, 431, 467, 481
- **Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
21A-21B, 21-22, 27A, 33A-33B, 33-34, 45A, 57A-57B, 57-58, 71A, 79A-79B, 79-80, 103A, 111A-111B, 111-112, 113A-113B, 113-114, 133A-133B, 133-134, 145A-145B, 145-146, 177A-177B, 177-178, 185A, 193A-193B, 193-194, 205A, 207A, 215A-215B, 215-216, 229A-229B, 229-230, 249A, 251A, 261A-261B, 261-262, 269A-269B, 269-270, 291A-291B, 291-292, 319A-319B, 319-320, 331A, 351A-351B, 351-352, 353A-353B, 353-354, 355, 362, 365A, 369A-369B, 369-370, 405A-405B, 405-406, 431A-431B, 431-432, 443A, 447A-447B, 447-448, 481A-481B, 481-482, 483A-483B, 483-484
- **Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
1J, 43I-43J, 71A-71B, 71-72, 73, 88, 89I-89J, 123I, 143A-143B, 143-144, 145A, 155J, 159A, 161A, 239I, 343A, 389A, 403A, 457I-457J
- **Identify alternative ways to solve a problem**  
43I-43J, 89I-89J, 113B, 123I, 155I, 167A-167B, 167, 172, 239I, 247B, 257A-257B, 307A, 307, 315A, 315, 319B, 425A-425B, 443A-443B, 457I-457J, 481
- **Show that a problem might have multiple solutions or no solution**  
1I-1J, 11-12, 13A-13B, 13, 15A, 15-16, 17-18, 21A-21B, 21-22, 23, 61A, 177A-177B, 177-178, 294, 327, 329J, 334, 335-336, 337B, 339A, 343A-343B, 343-344, 345-346, 347-348
- **Extend the solution of a problem to a new problem situation**  
1I-1J, 43J, 89I, 123J, 155I, 239I, 261A, 279I, 471B

**REASONING****Indicator Statement:**

Justify ideas or solutions with mathematical concepts or proofs

**Objectives(s):**

- **Use inductive or deductive reasoning**  
7A-7B, 7-8, 9-10, 21A, 25A, 32, 33A, 41, 71A-71B, 71-72, 73, 77A, 88, 95A, 99A, 103A, 125A, 127A, 167B, 183A, 187A, 219A, 227A-227B, 229A-229B, 243A, 249A, 263A, 265, 267A, 267, 286, 296, 297A, 334, 338, 369A-369B, 375A, 377A, 397A, 439, 441, 463A, 464
- **Make or test generalizations**  
51A, 67A, 67, 103A, 167B, 168, 169, 265A, 307A-307B, 401A-401B, 401-402, 405A, 417A-417B
- **Support or refute mathematical statements or solutions**  
103B, 165, 169A-169B, 169-170, 181, 363J, 403A, 417B, 417, 474
- **Use methods of proof, i.e., direct, indirect, paragraph, or contradiction**  
43J, 133, 239I, 243A, 247A, 291A, 303A, 311B, 337, 345A, 371B, 427A-427B, 427, 475B

**COMMUNICATION****Indicator Statement:**

Present mathematical ideas using words, symbols, visual displays, or technology

**Objectives(s):**

- **Use multiple representations to express concepts or solutions**  
1I-1J, 5A-5B, 5-6, 10, 14, 24, 32, 78, 104, 142, 155I, 212, 279I, 282, 287A-287B, 287-288, 311B, 415I-415J, 464, 476
- **Express mathematical ideas orally**  
1I-1J, 43I-43J, 89I-89J, 123I-123J, 155I-155J, 203I-203J, 239I-239J, 279I-279J, 329I-329J, 363I-363J, 415I-415J, 425A, 442, 443B, 457I-457J
- **Explain mathematically ideas in written form**  
96, 98, 100, 126, 158, 162, 168, 220, 320, 398, 432, 492B
- **Express solutions using concrete materials**  
1I, 11A, 43I-43J, 75A-75B, 75, 155I-155J, 181A-181B, 191A-191B, 265A-265B, 279I, 291A-291B, 291-292, 415J, 457I-457J

- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
1J, 43I-43J, 46, 47A, 57A, 61A, 114, 160, 170, 172, 177A-177B, 177-178, 182, 185A, 192, 205A, 207A, 221A, 224, 239J, 261A-261B, 268, 279J, 292, 308, 309A, 329I-329J, 389A, 398, 406, 431A-431B, 431-432, 433, 456, 465A, 472, 481A-481B, 481-482, 483A
- **Explain solutions in written form**  
22, 178, 252, 300, 329I, 415J, 426, 457J, 468
- **Ask questions about mathematical ideas or problems**  
126, 310, 314, 482
- **Give or use feedback to revise mathematical thinking**  
351A-351B, 351-352, 355, 362

## CONNECTIONS

### *Indicator Statement:*

Relate or apply mathematics within the discipline, to other disciplines, and to life

### *Objectives(s):*

- **Identify mathematical concepts in relationship to other mathematical concepts**  
3A, 31A-31B, 31-32, 63, 69A, 75A, 79A, 80, 105A-105B, 105-106, 107A, 137A-137B, 137-138, 145A, 147, 153-154, 154A, 161A-161B, 161-162, 163-164, 180, 196, 201, 283, 311B, 311, 419A-419B, 419-420, 435A-435B, 435-436, 439A-439B, 439-440, 456, 457J, 470, 471A-471B, 471-472, 486, 492B
- **Identify mathematical concepts in relationship to other disciplines**  
3B, 7B, 13B, 21B, 33B, 45B, 61B, 67B, 69B, 75B, 79B, 91B, 103B, 107B, 122B, 133B, 143B, 161B, 171B, 185B, 193B, 205B, 211B, 229B, 243B, 247B, 261B, 303B, 313B, 331B, 333B, 337B, 343B, 353B, 389B, 397B, 401B, 405B, 447B, 473B, 477B
- **Identify mathematical concepts in relationship to life**  
51B, 77B, 157A-157B, 180, 181B, 183B, 191A-191B, 193B, 203J, 205A-205B, 205-206, 207B, 208, 210, 211B, 215A-215B, 219A-219B, 219-220, 221A-221B, 221-222, 223A-223B, 231-232, 237-238, 238B, 267B, 272, 317A-317B, 331A, 335B, 339A-339B, 347B, 353A-353B, 371B, 395A-395B, 395-396, 399, 405B, 467B, 481B

- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
5A-5B, 5-6, 10, 24, 123J, 129A-129B, 129-130, 139A-139B, 139-140, 141A-141B, 141-142, 146, 147, 154, 154A, 164, 299A-299B, 299-300, 302, 342, 363I, 369A-369B, 383A-383B, 389A, 415J, 437A-437B, 437-438, 445A-445B, 445-446, 449, 456, 459A-459B, 470, 492A

**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Grade Two**

**Standard 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns**

***Objectives(s):***

- **Represent and analyze numeric patterns using skip counting by 2, 5, and 10 starting with any whole number and using whole numbers to 100**  
22, 79I, 81A, 91A, 99A-99B, 99-100, 107, 145B, 157A-157B, 158, 165, 320, 327, 465I, 467A-467B, 467-468
- **Represent and analyze numeric patterns using skip counting backward by 10s starting with any 2-digit whole number**  
91A, 99B, 100, 145B, 172
- **Recognize a function table as a relationship between numbers**  
31B, 167
- **Complete a function table with a given one-operation rule (+, -) using whole numbers**  
31B, 167

***Indicator Statement:***

**Identify, copy, describe, create, and extend nonnumeric patterns**

***Objectives(s):***

- **Represent and analyze growing patterns that start at the beginning and show no more than 3 levels, and ask for the next level, using symbols, shapes, designs, and pictures**  
476

- **Represent and analyze repeating patterns using 3 different objects in the core of the pattern**  
95A, 413B
- **Transfer a repeating pattern from one medium to 2 different media using no more than 3 different objects in the core of the pattern such as: red, green, red, green, ... A, B, A, B, ...  $\triangle$ ,  $\square$ ,  $\triangle$ ,  $\square$ , ...**  
Opportunity to meet this objective can be found on pages 95A, 413B

## EXPRESSIONS, EQUATIONS, AND INEQUALITIES

### ***Indicator Statement:***

**Write and identify expressions**

### ***Objectives(s):***

- **Represent numeric quantities using operational symbols (+, -) and whole numbers to 25**  
17A-17B, 19-20, 21, 24, 28

### ***Indicator Statement:***

**Identify, write, and solve equations and inequalities**

### ***Objectives(s):***

- **Represent relationships using appropriate relational symbols (>, <, =) and operational symbols (+, -) with whole numbers to 100**  
9A-9B, 9-10, 11-12, 31-32, 39, 57A-57B, 57-58, 59-60, 69, 91A-91B, 91-92, 93, 108, 135A, 144, 152, 163, 172B, 184, 199-200, 202, 221A-221B, 221-222, 223-224, 228, 268, 275A, 279, 282, 330, 355A, 377-378, 381, 424A, 481, 487A, 488, 491, 497
- **Find the missing number (unknown) in a number sentence using operational symbols (+, -) with whole numbers up to 50**  
22, 29A-29B, 29-30, 31, 137B, 143, 151-152, 166, 172A, 177B, 182, 183, 211-212, 216, 223, 397-398

**NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS*****Indicator Statement:***

**Locate points on a number line**

***Objectives(s):***

- **Represent whole numbers up to 100 on a number line**  
61A-61B, 61-62, 95B, 95-96, 107, 172B, 191A, 191-192, 229

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES*****Indicator Statement:***

**Recognize and apply the properties/attributes of plane geometric figures**

***Objectives(s):***

- **Identify and describe sides and corners**  
255A-255B, 255-256, 261A, 265A-265B, 265-266, 267, 282, 288
- **Identify and describe quadrilaterals such as: squares, rectangles, rhombi**  
261A, 265A-265B, 266, 267, 282, 288
- **Identify and describe polygons by the number of sides such as: triangles, squares, rectangles, hexagons, octagons**  
255A-255B, 255-256, 261A, 265A-265B, 265-266, 267, 282, 288
- **Combine and subdivide squares, triangles, and rectangles to identify a new shape**  
255A-255B, 255-256, 267, 282

## SOLID GEOMETRIC FIGURES

**Indicator Statement:**

Analyze the properties of solid geometric figures

**Objectives(s):**

- **Compare two- and three-dimensional shapes such as: square to a cube, square and rectangle to a rectangular prism.**  
245I, 249A-249B, 249-250, 251A-251B, 251-252, 253, 287, 318, 498A

## CONGRUENCE

**Indicator Statement:**

Compare congruent figures

**Objectives(s):**

- **Describe congruent figures as having the same size and shape**  
257A-257B, 257-258, 259A, 267, 287, 308, 362, 424B

## TRANSFORMATIONS

**Indicator Statement:**

Recognize a transformation

**Objectives(s):**

- **Apply visualization and spatial reasoning in activities such as: tangrams**  
51A, 264
- **Identify and demonstrate slides, flips, and turns**  
259A-259B, 259-260, 267, 287, 338A, 424A, 492

**Indicator Statement:**

Demonstrate symmetry

**Objectives(s):**

- **Recognize that basic shapes have several lines of symmetry**  
261A-261B, 261-262
- **Demonstrate symmetry in basic shapes and pictures by drawing 2 lines of symmetry**  
261B, 261-262



**STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:**

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

**MEASUREMENT SCALES*****Indicator Statement:***

**Read customary and metric measurement scales**

***Objectives(s):***

- **Read the scale on a ruler to identify length, in inches**  
343A, 343-344, 345B, 345-346, 361, 379B, 379, 418
- **Tell time in intervals of 5 minutes using an analog clock**  
34, 161A, 291A-291B, 291-292, 293A-293B, 293-294, 295A-295B, 295-296, 301A, 306, 307, 318, 329-330, 337, 362, 404, 458
- **Compare the same time on analog and digital clocks**  
291-292, 293-294, 295B, 295-296, 424B
- **Read a thermometer to the nearest 5° (°F and °C) on a thermometer with a scale of 10° intervals**  
369A-369B, 369-370, 388
- **Identify and compare the weight of objects, to the nearest pound, on a standard scale**  
Opportunity to meet this objective can be found on pages 363A-363B, 363-364, 365A-365B, 365-366

**MEASUREMENT TOOLS*****Indicator Statement:***

**Measure in customary and metric units**

***Objectives(s):***

- **Measure length of objects and pictures of objects using a ruler or tape measure to the nearest inch, centimeter, and foot**  
343A-343B, 343-344, 345B, 345-346, 347-348, 361, 379B, 379, 387, 418, 458
- **Measure capacity of objects using cup, pint, quart, liter, and gallon**  
339I, 353A-353B, 353-354

- **Measure objects to the nearest pound and kilogram using a variety of scales**  
15B  
Further opportunities to meet this objective can be found on pages 363A-363B, 363-364, 365A-365B, 365-366
- **Select and use appropriate units of measure for length/height, weight, and capacity**  
344, 345A, 346, 347A-347B, 348, 357A, 361, 366, 367A-367B, 367-368, 371, 379B, 383, 387

## APPLICATIONS IN MEASUREMENT

### *Indicator Statement:*

Apply measurement concepts

### *Objectives(s):*

- **Develop the concept of perimeter by counting units around a picture or geometric shape**  
351A-351B, 351-352, 361, 384, 387
- **Develop the concept of area by counting square units within a picture or geometric shape**  
Opportunity to meet this objective can be found on pages 351B, 351-352

### *Indicator Statement:*

Calculate to determine equivalent units

### *Objectives(s):*

- **Recognize equivalent units of 12 inches = 1 foot**  
343A, 343, 347A, 405A

## STANDARD 4.0—KNOWLEDGE OF STATISTICS:

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

## DATA DISPLAYS

### *Indicator Statement:*

Collect, organize, and display data

### *Objectives(s):*

- **Collect data by conducting surveys**  
217A, 289J, 313A, 321A, 322

- **Collect data in tables**  
289J, 311A-311B, 311-312, 313A-313B, 313-314
- **Organize and display data to make pictographs using scales of 1:1 and 2:1**  
69A, 81A, 215A, 289J, 319A-319B, 319, 321A, 327B, 413A
- **Organize and display data to make single bar graphs**  
217A, 321A-321B, 322, 327B, 379A, 439A-439B, 439, 441, 447A, 463, 489A

## DATA ANALYSIS

**Indicator Statement:**  
Analyze data

**Objectives(s):**

- **Interpret data contained in tables**  
61A, 77, 78B, 187A, 189A-189B, 189-190, 201, 289J, 311A-311B, 311-312, 313A-313B, 317, 337, 405A-405B, 405-406, 417, 424
- **Interpret data contained in pictographs using scales of 1:1 and 2:1**  
215A, 289J, 319A-319B, 319-320, 321A, 327A-327B, 327, 331, 338, 413A, 427A, 442
- **Interpret data contained in single bar graphs using a variety of categories and intervals of 1, 2, 5, and 10**  
17A, 63A, 157A, 279A, 289J, 321A-321B, 321-322, 327A-327B, 328, 331, 338, 395A, 439A-439B, 439-440, 463, 492

## STANDARD 5.0—KNOWLEDGE OF PROBABILITY:

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

## SAMPLE SPACE

**Indicator Statement:**  
Identify possible outcomes

**Objectives(s):**

- **Identify some possible outcomes that make up the sample space such as on a number cube rolling a 2**  
375A-375B, 375-376

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE*****Indicator Statement:***

**Apply knowledge of whole numbers and place value**

***Objectives(s):***

- **Use concrete materials to compose and decompose quantities up to 100**  
25A-25B, 25-26, 45A, 51A-51B, 53A-53B, 81A-81B, 83B, 89B, 159B, 173J, 175A, 389I
- **List multiple representations for a number**  
1I, 25A-25B, 25-26, 45A, 81A-81B, 81-82, 89A-89B, 89-90, 137A, 164, 166, 171-172, 172A-172B, 185A, 221A, 297A, 338B, 389I
- **Develop a sense of the size of a number in relation to other numbers**  
79I, 91A-91B, 91-92, 95A-95B, 95-96, 191A-191B, 229B, 389J, 391A-391B, 391-392, 397A, 399A, 445B
- **Use the numbers of 10, 50, and 100 as anchors in relationship to other numbers**  
79I, 81A-81B, 81-82, 83A-83B, 83-84, 93, 95A-95B, 95-96, 107, 389I, 391A-391B, 391-392
- **Read, write, and represent whole numbers using models, symbols, and words through 1000**  
65B, 81A-81B, 81-82, 83A-83B, 83-84, 85A-85B, 85-86, 93, 147B, 164, 389I, 393A-393B, 393-394, 395A-395B, 395-396, 403, 423
- **Express whole numbers up to 999 using expanded form**  
137A, 395A-395B, 395-396
- **Identify the place value of a digit in whole numbers up to 999**  
85, 105B, 135B, 393A-393B, 393-394, 406, 416, 427B, 431B
- **Compare and order whole numbers up to 999 using words and relational symbols ( $>$ ,  $<$ ,  $=$ )**  
12, 85B, 91A-91B, 91-92, 93, 108, 172B, 202, 282, 308, 338A, 389J, 399A-399B, 399-400, 403, 407A-407B, 416, 424, 424A, 498A

- **Estimate quantities up to 100 using a reference point such as 10 and the terminology "about"**  
95A, 133I, 170, 172
- **Count forward by 2s, 5s, and 10s starting with numbers other than one**  
22, 91A, 99B, 100, 107, 145B, 152, 408, 413A, 413-414
- **Count backward by 2s, 5s, and 10s from a multiple of that number**  
91A, 99B, 100
- **Use ordinal numbers to indicate position up to thirty-first**  
34, 103A-103B, 103-104, 107, 282

**Indicator Statement:**

Apply knowledge of fractions

**Objectives(s):**

- **Read, write, and represent fractions as parts of a single region using symbols or models with denominators of 2, 3, or 4**  
12, 245J, 269A-269B, 269-270, 271A-271B, 271-272, 273A-273B, 273-274, 275A-275B, 275-276, 281, 288, 372, 382, 404, 424B
- **Read, write, and represent halves or fourths as parts of a set using symbols, words, and models**  
277A, 277-278, 281, 288

**Indicator Statement:**

Apply knowledge of money

**Objectives(s):**

- **Determine the value of a given set of mixed currency up to \$10**  
22, 109A-109B, 109-110, 111A, 111-112, 113A-113B, 113-114, 166, 184, 318, 372, 424A, 442
- **Represent money amounts up to \$10**  
79J, 110, 112, 117A-117B, 117-118, 172B, 254
- **Compare the value of 2 sets of mixed currency up to \$10**  
109A, 115A-115B, 115-116

**NUMBER THEORY****Indicator Statement:****Apply number relationships****Objectives(s):**

- **Build and describe models of even and odd numbers using concrete materials, and discuss the models**  
101A-101B

**NUMBER COMPUTATION****Indicator Statement:****Analyze number relations and compute****Objectives(s):**

- **Demonstrate proficiency with addition and subtraction basic facts using a variety of strategies**  
1I, 3-4, 5A, 11-12, 13-14, 21-22, 39-40, 41I, 43A-43B, 43-44, 45A-45B, 45-46, 47A-47B, 47-48, 51A-51B, 51-52, 53A-53B, 53-54, 59-60, 61A-61B, 61-62, 63A-63B, 63-64, 69A-69B, 69-70, 71, 77-78, 78B, 144, 152, 166, 184, 254, 308, 498A
- **Add no more than 3 whole number addends with no more than 2 digits in each addend and a sum of no more than 100**  
41J, 49A-49B, 49-50, 59, 77, 133I-133J, 135A-135B, 135-136, 137A-137B, 137-138, 139A-139B, 139-140, 143, 152, 155A-155B, 155-156, 171, 173I-173J, 175A-175B, 175-176, 177A-177B, 177-178, 179A-179B, 179-180, 181A-181B, 181-182, 183, 187A-187B, 187-188, 193A-193B, 193-194, 199A-199B, 201, 207-208, 265A, 282, 382, 397A-397B, 397-398, 424B, 442, 492
- **Subtract whole numbers with no more than 2 digits in the minuend or the subtrahend**  
145A-145B, 145-146, 147A-147B, 147-148, 151, 172, 209I-209J, 211A-211B, 211-212, 213A-213B, 213-214, 215A-215B, 215-216, 217A-217B, 217-218, 223, 225A
- **Solve word problems based on addition or subtraction situations**  
1J, 3A-3B, 5A-5B, 5-6, 9A, 9A-9B, 9-10, 11, 13A, 14, 15A, 17A-17B, 17-18, 21, 23A, 25A, 27A, 29A-29B, 31A, 31-32, 39-40, 43B, 49A, 52, 67A, 69-70, 72, 78A, 97A, 113A-135A, 141A, 159A, 172A, 175A, 191A, 199-200, 213A, 227A, 247A, 257A, 273A, 277A, 291A, 293A, 299A, 315A, 319A, 351A, 363A, 407A

- **Write word problems for addition and subtraction situations**  
6, 13B, 16, 18, 19A, 20, 24, 32, 62, 70, 78B, 94, 152, 163B, 164, 189, 200, 211B, 222, 226, 397B, 398, 416, 442, 458, 498B
- **Add and subtract money amounts up to \$1**  
43A, 66, 136, 145A, 146, 149A, 149, 185A-185B, 185-186, 189A, 199A, 201, 225A-225B, 225-226, 254, 318, 391A, 401A, 404, 424B, 458, 492
- **Apply the concept of inverse operations to addition and subtraction**  
23A-23B, 23-24, 27A-27B, 27-28, 31A-31B, 33, 39-40, 63A-63B, 63-64, 65A-65B, 65-66, 67B, 71-72, 78, 166, 172A-172B, 202, 227A-227B, 227-228, 332, 338A
- **Build equal groups to model multiplication**  
465I, 467A-467B, 467-468, 469A-469B, 470, 471A-471B, 472, 473A-473B, 474, 475B, 476, 479A-479B, 479-480, 481, 490, 498
- **Build groups that share equally for division**  
483A-483B, 483-484, 485A-485B, 485-486, 491, 498

***Indicator Statement:***  
**Estimation**

***Objectives(s):***

- **Determine the reasonableness of sums and differences**  
18, 150, 161A-161B, 161-162, 165, 172, 229A-229B, 229-230, 406

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING**

***Indicator Statement:***

**Apply a variety of concepts, processes, and skills to solve problems**

***Objectives(s):***

- **Identify the question in the problem**  
1I-1J, 3A, 9B, 9, 15A, 37, 57, 89, 155, 265, 311, 439, 455B, 461
- **Decide if enough information is present to solve the problem**  
53A, 85A, 101A, 105A, 345A, 435A

- **Make a plan to solve a problem**  
1I, 3A, 9B, 9, 15A, 19A-19B, 19-20, 21, 23A, 31A, 40, 49A, 57, 67A, 79I-79J, 89, 97A, 113A, 155, 209I-209J, 265, 269A, 289I-289J, 311, 335, 351A, 401A, 439
- **Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
9A-9B, 31A-31B, 31-32, 57A-57B, 57-58, 69A-69B, 69-70, 89A-89B, 89-90, 155A-155B, 155-156, 163A-163B, 163-164, 199A-199B, 199-200, 265A-265B, 265-266, 279A-279B, 279-280, 311A-311B, 311-312, 3329A-329B, 329-330, 379A-379B, 379-380, 413A-413B, 413-414, 415A-415B, 415-416, 439A-439B, 439-440, 479A-479B, 479-480
- **Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation**  
1I-1J, 41I, 79I-79J, 113A, 173I, 209I-209J, 389I-389J, 425I-425J
- **Identify alternative ways to solve a problem**  
1I-1J, 173I-173J, 188, 193A-193B, 193-194, 209I, 425I
- **Show that a problem might have multiple solutions or no solution**  
165, 185A, 389I
- **Extend the solution of a problem to a new problem situation**  
10, 109B271B, 279, 291B, 301B, 319A, 320, 339I, 355B, 377A-377B, 377-378, 389I, 399B, 415A, 449A

## REASONING

### *Indicator Statement:*

Justify ideas or solutions with mathematical concepts or proofs

### *Objectives(s):*

- **Use inductive or deductive reasoning**  
67, 81, 86, 92, 98, 102, 103-104, 105A-105B, 105-106, 107, 111B, 147A-177A, 180, 214, 250, 251B, 261A, 265A-265B, 265-266, 267, 288, 311A, 319A, 323A, 342, 353A, 358, 363B, 407B, 445A
- **Make or test generalizations**  
45A, 45, 51A, 61A, 65A, 99B, 157A-157B, 157-158, 172, 199A, 255, 413A-413B, 413-414, 417, 471A
- **Support or refute mathematical statements or solutions**  
91B, 159, 189B, 191, 257A, 269, 303, 467A, 469A, 479, 483B, 486



- **Use methods of proof, i.e., direct, indirect, paragraph, or contradiction**  
83A, 113A, 139A, 147A, 187A, 225A, 227A-227B, 227-228, 268, 449B

## COMMUNICATION

### *Indicator Statement:*

**Present mathematical ideas using words, symbols, visual displays, or technology**

### *Objectives(s):*

- **Use multiple representations to express concepts or solutions**  
46, 82, 86, 145A, 215B, 254, 293A-293B, 293-294, 295A-295B, 295-296, 305A-305B, 305-306, 318, 337, 389I, 394, 395A-395B, 395-396, 416
- **Express mathematical ideas orally**  
1I-1J, 5A, 41I-41J, 63B, 79I-79J, 97B, 133I-133J, 173I-173J, 179B, 181B, 209I, 213B, 217B, 245I-245J, 257B, 261B, 273B, 289I-289J, 339I, 345B, 363B, 389I-389J
- **Explain mathematically ideas in written form**  
30, 41I, 48, 58, 62, 64, 66, 84, 90, 92, 96, 102, 133I-133J, 138, 148, 173I, 182, 190, 198, 205, 209I, 216, 252, 378, 410, 421, 425I-425J, 495
- **Express solutions using concrete materials**  
1J, 15A-15B, 45B, 47A-47B, 149A, 175A-175B, 177A-177B, 179A, 209J, 211A-211B, 213B, 215A, 269A, 339I, 389I, 467B, 469A, 471A-471B, 483A-483B
- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
1I-1J, 4, 25A, 47A, 48, 57A-57B, 57-58, 61A, 68, 79I, 93, 146, 163A, 181A, 185A, 193A, 197A, 221A-221B, 221-222, 245I-245J, 258, 260, 289J, 343A, 425I-425J, 439A-439B, 439-440, 465I, 479A-479B, 479-480
- **Explain solutions in written form**  
1J, 41I, 49, 54, 79I-79J, 106, 108, 133I-133J, 138, 148, 173I, 182, 190, 198, 205, 209I, 216, 252, 378, 410, 421, 425I-425J, 495
- **Ask questions about mathematical ideas or problems**  
191B, 303B, 314, 316, 323B, 327A, 328, 329B, 406
- **Give or use feedback to revise mathematical thinking**  
103A, 105A, 155A-155B, 155-156, 197A-197B, 197-198, 249A, 251A, 367A

## CONNECTIONS

### **Indicator Statement:**

**Relate or apply mathematics within the discipline, to other disciplines, and to life**

### **Objectives(s):**

- **Identify mathematical concepts in relationship to other mathematical concepts**  
23A-23B, 23-24, 27A, 65A-65B, 65-66, 72, 78, 94, 172A, 249A-249B, 249-250, 318, 327A-327B, 338A, 343A-343B, 347A-347B, 355A-355B, 355-356, 379B, 404, 425I, 439B, 498A
- **Identify mathematical concepts in relationship to other disciplines**  
25B, 51B, 69B, 81B, 103B, 135B, 175B, 181B, 197B, 211B, 229B, 247B, 261B, 271B, 297B, 311B, 327B, 329B, 341B, 343B, 353B, 363B, 391B, 485B
- **Identify mathematical concepts in relationship to life**  
161A-161B, 176, 209J, 217A, 225B, 247, 249B, 251B, 257B, 279B, 289I-289J, 291B, 297A-297B, 297-298, 299, 301A-301B, 301-302, 304, 307, 313A-313B, 313, 413B, 418, 424B, 482
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
27A-27B, 27-28, 31A-31B, 33, 39-40, 47A-47B, 47-48, 60, 63A-63B, 63-64, 67B, 71, 78, 94, 166, 172B, 202, 293A-293B, 293-294, 295A-295B, 295-296, 332, 345A, 347A, 355A, 357A, 365A, 379A

**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Grade Three**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns and functions**

***Objectives(s):***

- **Represent and analyze numeric patterns using skip counting**  
***Assessment Limits:***  
**Use 2, 5, 10, or 100 starting with any whole number (0 – 1000)**  
10A, 24A-24B, 25, 26, 34, 128A, 212B, 217, 223, 276B, 277, 280B, 314J, 333-334
  
- **Represent and analyze numeric patterns using skip counting**  
***Assessment Limits:***  
**Use 3 or 4 starting with 0, 1, 2, 3, or 4 (0 – 30)**  
24B, 24, 28A, 31, 54-55, 80A, 281, 314J, 317, 319, 333-334
  
- **Represent and analyze numeric patterns using skip counting backward**  
***Assessment Limits:***  
**Use 10 or 100 starting with any whole number (0 – 1000)**  
55, 58
  
- **Complete a function table using a given addition or subtraction rule**  
72A-72B, 72-73, 113, 115, 116, 120

**Indicator Statement:**

Identify, describe, extend, and create non-numeric patterns

**Objectives(s):**

- Represent and analyze growing patterns using symbols, shapes, designs, or pictures

**Assessment Limits:**

Start at the beginning, show at least 3 levels but no more than 5 levels, and ask for the next level

126A, 273, 333, 337, 356, 365, 372A

- Represent and analyze repeating patterns using symbols, shapes, designs, or pictures

**Assessment Limits:**

Use no more than 4 objects in the core of the pattern

24A, 33, 147, 332A-332B, 335

**EXPRESSIONS, EQUATIONS, AND INEQUALITIES****Indicator Statement:**

Write and identify expressions

**Objectives(s):**

- Represent numeric quantities using operational symbols (+, -, ×, ÷)

**Assessment Limits:**

Use operational symbols (+ or -) and whole numbers (0 – 50)

132A, 404A-404B, 404-405, 406A, 408-409, 414-415, 425, 431

**Indicator Statement:**

Identify, write, solve, and apply equations and inequalities

**Objectives(s):**

- Represent relationships using appropriate relational symbols (<, >, or =) and operational symbols (+, -, ×, ÷) on either side

**Assessment Limits:**

Use operational symbols (+ or -) and whole numbers (0 – 1000)

18A-18B, 18-19, 20-21, 34-35, 45, 53, 61, 76A-76B, 115, 117, 121, 195, 210, 226A, 287, 296-297, 303

- Find the missing number (unknown) in a number sentence (equation) using operational symbols (+, -, ×, ÷)

**Assessment Limits:**

Use one operational symbol (+ or -) and whole numbers (0 – 100)

55, 67-68, 71, 73, 76A-76B, 76-77, 78-79, 86A, 112, 115, 249, 291, 293, 305, 323, 359

- Find the missing number(s) (unknown) on one or both sides of a number sentence (equation)

55, 67-68, 71, 73, 76A-76B, 76-77, 78-79, 86A, 112, 115, 249, 291, 293, 305, 323, 359

## NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS

### *Indicator Statement:*

Locate points on a number line

### *Objectives(s):*

- Represent whole numbers on a number line

#### *Assessment Limits:*

Use whole numbers (0 - 500)

20, 23, 96A

- Represent proper fractions on a number line

#### *Assessment Limits:*

Use fractions that have denominators of 2, 3, or 4

512A-512B, 512-513, 514-515, 542B

## STANDARD 2.0—KNOWLEDGE OF GEOMETRY:

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

## PLANE GEOMETRIC FIGURES

### *Indicator Statement:*

Analyze the properties of plane geometric figures

### *Objectives(s):*

- Identify or describe points, lines, line segments, rays, and angles

442A-442B, 442-443, 444A-444B, 444-445

- Identify or describe polygons

#### *Assessment Limits:*

Use triangles, quadrilaterals, pentagons, hexagons, or octagons and the number of sides or vertices

114, 248, 446A-446B, 446-449, 450A-450B, 450-453, 475, 476B

- Identify or describe quadrilaterals  
**Assessment Limits:**  
Use squares, rectangles, rhombi, parallelograms, and trapezoids and the length of sides  
114, 192, 402A, 454A-454B, 454-455, 474B, 474-475
- Identify triangles, rectangles, or squares as part of a composite figure  
**Assessment Limits:**  
Use a combination of 2 of the stated polygons  
449, 454B, 474B

**Indicator Statement:**

Analyze geometric relationships

**Objectives(s):**

- Identify right angles  
444A-444B, 444-445

**SOLID GEOMETRIC FIGURES****Indicator Statement:**

Analyze the properties of solid geometric figures

**Objectives(s):**

- Identify and describe cubes, rectangular prisms, and triangular prisms  
**Assessment Limits:**  
Use cubes and the number of edges, faces, vertices, or shape of each face  
54, 276A, 426I, 428A-428B, 428-431, 432A-432B, 432-433, 439, 440-441

**CONGRUENCE****Indicator Statement:**

Analyze congruent figures

**Objectives(s):**

- Identify or describe geometric figures as congruent  
**Assessment Limits:**  
Use the same shape and same size  
204A, 358, 456A-456B, 456-458

**TRANSFORMATIONS****Indicator Statement:**

Analyze a transformation

**Objectives(s):**

- Identify and describe the results of a slide, flip, and turn

**Assessment Limits:**

Use horizontal slide, flip over a vertical line, or turn of 90° clockwise around a given point of a geometric figure or picture

54, 456A-456B, 456-459

**Indicator Statement:**

Identify and describe symmetry in geometric figures or pictures

**Objectives(s):****Assessment Limits:**

Use no more than 4 lines of symmetry

102A, 402a, 460A-460B, 460-461, 476B

**STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:**

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

**MEASUREMENT SCALES****Indicator Statement:**

Read customary and metric measurement scales

**Objectives(s):**

- Estimate and determine length

**Assessment Limits:**

Use the nearest centimeter or  $\frac{1}{2}$  inch

57, 304, 496J, 532A-532B, 532-533, 534A-534B, 534-535, 582A-582B, 582-583

- Tell time in days, hours, minutes, and seconds

**Assessment Limits:**

Use the nearest minute using an analog clock

192A-192B, 192-195, 196A-196B, 196-197, 199, 202-203, 238, 247, 250, 254, 416

- **Estimate and read temperature**  
**Assessment Limits:**  
Use the nearest degree (°F or °C)  
696A-696B, 696-697
- **Estimate and determine weight of objects**  
**Assessment Limits:**  
Use the nearest pound or ounce  
690A-690B, 690

## MEASUREMENT TOOLS

### **Indicator Statement:**

Measure in customary and metric units

### **Objectives(s):**

- **Measure length of objects and pictures of objects using a ruler, a tape measure, a yardstick, or a meter stick**  
**Assessment Limits:**  
Use a ruler and the nearest centimeter or  $\frac{1}{2}$  inch  
54, 304, 496J, 532A-532B, 532-533, 534A-534B, 534-535, 582A-582B, 582-583
- **Measure capacity of containers to the nearest cup, pint, quart, gallon, milliliter, and liter using graduated containers**  
678I, 680A, 684A-684B
- **Measure weight/mass of objects to the nearest ounce, pound, gram, and kilogram**  
690A-690B, 690, 694A

## APPLICATIONS IN MEASUREMENT

### **Indicator Statement:**

Apply measurement concepts

### **Objectives(s):**

- **Estimate and determine the perimeter of geometric figures and pictures on a grid**  
**Assessment Limits:**  
Use counting and whole numbers (0 – 50)  
114, 316A, 358, 426J, 464A-464B, 464-466, 476A-476B



- Estimate and determine the area of geometric figures and pictures on a grid  
**Assessment Limits:**  
Use counting and whole numbers (0 – 50)  
468A-468B, 468-471
- Estimate and determine the volume of rectangular prisms  
472A-472B, 472-473

**Indicator Statement:**

Calculate equivalent measurements

**Objectives(s):**

- Determine equivalent units of length  
**Assessment Limits:**  
Use 12 inches = 1 foot and 3 feet = 1 yard and whole numbers (0 – 30)  
536A-536B, 536-537, 538A-538B, 538-539

**STANDARD 4.0—KNOWLEDGE OF STATISTICS:**

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

**DATA DISPLAYS****Indicator Statement:**

Collect, organize, and display data

**Objectives(s):**

- Collect data by conducting surveys  
204A -204B, 207
- Organize and display data to make tables using a variety of categories and sets of data  
**Assessment Limits:**  
Use no more than 4 categories from one set of data and whole numbers (0 – 1000)  
204A -204B, 204-207, 224, 255-256
- Organize and display data to make pictographs using a variety of scales  
**Assessment Limits:**  
Use scales of 2:1, 4:1, or 10:1 and whole numbers (0 – 100)  
96A, 190J, 226A-226B, 226-227, 236A, 237, 240-241, 253, 256, 342A

- **Organize and display data to make single bar graphs using a variety of categories and intervals**  
**Assessment Limits:**  
**Use no more than 4 categories of data with intervals of 1, 2, 5, or 10 and whole numbers (0 –100)**  
94A, 190J, 228A-228B, 230,236B, 237, 240-241, 247, 253, 257, 344A
- **Organize and display data to make line plots using a variety of intervals**  
208A-208B, 236A, 237, 257

## DATA ANALYSIS

**Indicator Statement:**  
**Analyze data**

### **Objectives(s):**

- **Interpret data contained in tables using a variety of categories and intervals**  
**Assessment Limits:**  
**Use no more than 4 categories from one set of data and whole numbers (0 – 1000)**  
84, 100, 107, 112, 130, 134, 194, 226-227, 251, 349
- **Interpret data contained in pictographs using a variety of categories and intervals**  
**Assessment Limits:**  
**Use scales of 2:1, 4:1, or 10:1 and whole numbers (0 – 100)**  
55, 95, 96A, 115, 140A, 190J, 212-214, 217, 224-225, 226B, 237, 246, 251, 284A, 285, 305, 312, 342A, 359, 428A
- **Interpret data contained in single bar graphs using a variety of categories and intervals**  
**Assessment Limits:**  
**Use no more than 4 categories of data, intervals of 1, 2, 5, or 10 and whole numbers (0 – 100)**  
55, 94A, 115, 190J, 212B, 213-215, 216-217, 221, 224-225, 228A-228B, 228-230, 232A, 236B, 237, 240, 246-247, 249, 252-253, 255, 257, 286A, 344A
- **Interpret data contained in line plots using a variety of intervals**  
208A-208B, 208-210, 215, 216A, 224, 236A, 237, 247, 251, 255, 257, 305

**STANDARD 5.0—KNOWLEDGE OF PROBABILITY:**

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

**SAMPLE SPACE*****Indicator Statement:***

**Identify possible outcomes**

***Objectives(s):***

- **Identify possible outcomes that make up the sample space for a given real life situation**  
700B, 700-701, 707
- **Identify possible outcomes that make up the sample space for a given experiment such as: flipping a coin, spinning a spinner, and rolling a number cube**  
700A, 700-701

**THEORETICAL PROBABILITY*****Indicator Statement:***

**Identify the probability of one event**

***Objectives(s):***

- **Describe the probability of an event using words**  
***Assessment Limits:***  
**Use probability terms of more (or most) likely, less (or least) likely, or equally likely**  
55, 104A, 136A, 200A, 318A, 384A, 700A-700B, 700-701, 702A-702B, 702

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE*****Indicator Statement:***

**Apply knowledge of whole numbers and place value**

**Objectives(s):**

- Read, write, and represent whole numbers using symbols, words, and models

**Assessment Limits:****Use whole numbers (0 - 10,000)**

2I-2J, 4A-4B, 4-5, 6A-6B, 6-7, 8A-8B, 8-9, 10A-10B, 10-11, 12A-12B, 12-13, 16-17, 53, 54, 56-57, 60, 104-105, 146A-146B, 146-147

- Express whole numbers using expanded form

**Assessment Limits:****Use whole numbers (0 - 10,000)**

6-7, 9, 10B, 10-11, 12-13, 17, 44B, 44, 52, 304

- Identify the place value of a digit in a whole number

**Assessment Limits:****Use whole numbers (0 - 9,999)**

13, 17, 41, 44B, 44, 52-53, 56-57, 101, 114, 127, 143, 358, 373

- Compare, order, and describe whole numbers with or without using relational symbols ( $<$ ,  $>$ ,  $=$ )

**Assessment Limits:****Use no more than four whole numbers (0 - 10,000)**

18A-18B, 18-19, 20-21, 22A-22B, 22-23, 27, 28A-28B, 28-29, 30-31, 34-35, 44A-44B, 45, 53, 54, 57, 58, 61, 71, 195, 210, 239, 248, 294, 400

**Indicator Statement:**

Apply knowledge of fractions

**Objectives(s):**

- Read, write, and represent fractions as parts of a single region using symbols, words, and models

**Assessment Limits:****Use fractions with denominators of 2, 3, or 4**

496I, 498A-498B, 498-501, 502A-502B, 502-503, 710B

- Read, write, and represent fractions as parts of a set using symbols, words, and models

**Assessment Limits:****Use fractions with denominators of 2, 3, or 4, and use sets of 2, 3, 4 items, respectively**

516B, 517, 518A-518B, 518-519, 542A

**Indicator Statement:****Apply knowledge of money****Objectives(s):**

- **Represent money amounts in different ways**

**Assessment Limits:****Use money amounts (\$0 - \$100)**

36B, 38-39, 40A-40B, 41, 44A, 46-47, 52, 63, 90A, 143, 145

- **Determine the value of a given set of mixed currency**

**Assessment Limits:****Use coins and bills (\$0 - \$100)**

36A-36B, 36-37, 38, 41, 44-47, 52, 59, 273, 433, 439,

- **Compare the value of two sets of mixed currency**

43, 248

**NUMBER THEORY****Indicator Statement:****Apply number relationships to:****Objectives(s):**

- **Identify and describe whole numbers as even or odd**

**Assessment Limits:****Use whole numbers (0 – 100)**

24, 276B

**NUMBER COMPUTATION****Indicator Statement:****Analyze number relations and compute****Objectives(s):**

- **Add numbers using a variety of strategies**

**Assessment Limits:****Use no more than 3 addends, with no more than 3 digits in each addend and whole numbers (0 – 1000)**

62, 66A-66B, 66-69, 70A, 80A-80B, 80-81, 82A-82B, 92-93, 112, 114, 116-117, 120-122, 124i, 126A-126B, 126-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-137, 143, 144-145, 147, 199, 207, 215, 231, 248, 304, 335, 339

- **Subtract numbers using a variety of strategies**  
**Assessment Limits:**  
Use no more than 3 digits in the minuend or subtrahend and whole numbers (0 – 999)  
215, 248, 268, 283, 329, 345, 358
- **Solve addition or subtraction number word problems**  
4A, 6A, 9, 11, 14A, 16, 32A, 54, 57, 59, 61, 63, 66A, 69, 72A, 73, 82A, 98A, 104, 107, 112-113, 114-115, 121, 127, 137, 143, 145, 198A, 217, 228A, 231, 238A, 238-239, 266A
- **Add and subtract money amounts**  
8A, 76B, 89, 124J, 201, 212J, 217, 233, 237, 248, 287, 288A, 304, 312, 317, 385, 391
- **Identify and apply the concept of inverse operations to addition and subtraction**  
18A, 70A-70B, 70-71, 78-79, 112-113, 116, 120
- **Represent multiplication and division basic facts using number sentences, pictures, and drawings**  
**Assessment Limits:**  
Use basic facts of no more than  $9 \times 9 = 81$   
258I-258J, 260A-260B, 260-261, 262A-262B, 262-265, 274-275, 276A-276B, 276-278, 280A-280B, 280-281, 282A-282B, 288A-288B, 289, 294A, 295, 302-303, 304, 306, 310-312, 314I, 316A-316B, 316-317, 318A-318B, 318-319, 320A-320B, 320-323, 324A-324B, 324-327, 328B, 329, 336-337, 338A-338B, 338, 368I-368J, 370A-370B, 370-371, 372A-372B, 372-373, 374A-374B, 374-377, 380a, 382-383, 386a-386b, 386-387, 388a-388b, 389, 390a-390b, 390, 392a-392b, 393, 395, 406a-406b, 416, 418, 422-423, 425, 439
- **Identify and use properties of multiplication**  
**Assessment Limits:**  
Use the properties of commutative, identity, or zero and whole numbers (0 – 20)  
258J, 263-265, 275, 276B, 280A, 282B, 286A-286B, 286-287, 293, 297, 309, 310-311, 321, 324-325, 328, 337, 341, 361
- **Multiply a one-digit factor by a two-digit factor using models, pictures, and drawings**  
610I, 612A, 612, 626A-626B, 626-629, 630A-630B, 630, 632A, 658A

- **Divide a two-digit dividend by a one-digit divisor using models, pictures, and drawings**  
398A-398B, 398-400, 402B, 408-409, 610J, 648A-648B, 648-649, 650B, 650-651, 658B
- **Identify and apply the concept of inverse operations to multiplication and division**  
384A-384B, 384-385, 386A-386B, 386-387, 388A-388B, 388-389, 390-391, 392A, 392-393, 394-395, 396A-396B, 396, 402, 414-415, 416, 419-421
- **Write a word problem based on multiplication or division number sentences**  
258i, 266A-266B, 266-267, 273, 274-275, 283, 303, 306, 310, 316B, 319, 338B, 339, 375-376, 382, 383, 387, 391, 397, 402B, 409, 415, 417, 418, 422

***Indicator Statement:***  
**Estimation**

***Objectives(s):***

- **Determine the reasonableness of sums and differences**  
25, 87-88, 95, 99, 112, 127

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING**

***Indicator Statement:***

**Apply a variety of concepts, processes, and skills to solve problems**

***Objectives(s):***

- **Identify the question in the problem**  
14A-14B, 14-15, 17, 42A-42B, 42-43, 47, 48-49, 53, 57, 79, 140, 236, 284A-284B, 284-285, 296-297, 303, 308, 332, 346, 380, 394
- **Decide if enough information is present to solve the problem**  
348B, 406B, 540A-540B, 540-541, 710B
- **Make a plan to solve a problem**  
2J, 4A, 32, 66A, 140, 190I-190J, 217, 236, 266A, 270, 332A, 332, 346-347, 380, 404

- **Apply a strategy, ie draw a picture, guess and check, finding a pattern, writing an equation**  
32A-32B, 33, 34, 35, 39, 44A-44B, 44-45, 76A-76B, 76-77, 78-79, 104A-104B, 104-105, 140A-140B, 140-142, 144-145, 196A, 236A-236B, 236-237, 270A-270B, 270-273
- **Select a strategy, ie. draw a picture, guess and check, finding a pattern, writing an equation**  
10A, 32A-32B, 32, 58, 76A, 80A, 258I, 280A, 328A-328B, 396B, 640A-640B, 640-641
- **Identify alternative ways to solve a problem**  
32A-32B, 32, 64I, 85, 124J, 135, 258I, 320, 329, 348A-348B, 350, 368I-368J, 372B, 406, 610I, 640A-640B, 640-641
- **Show that a problem might have multiple solutions or no solution**  
2I, 20, 41, 44A, 79, 143, 249, 368I, 374B, 376, 395, 409, 426J, 441, 496I
- **Extend the solution of a problem to a new problem situation**  
2I-2J, 85, 124I, 195, 279, 283, 284A-284B, 284-285, 296-297, 303, 308, 320A, 368I, 376, 398A, 432A, 610I, 678J

## REASONING

### *Indicator Statement:*

**Justify ideas or solutions with mathematical concepts or proofs**

### *Objectives(s):*

- **Use inductive or deductive reasoning**  
5, 6B, 10A, 11, 28B, 126B, 273, 328B, 371, 402A, 404A, 436A, 644A-644B, 644-645
- **Make or test generalizations**  
22A, 72A-72B, 72073, 79, 81, 115, 305, 344A-344B, 344-345, 350-351, 356-357, 359, 363, 389, 391, 403, 417, 678J
- **Support or refute mathematical statements or solutions**  
11, 13, 19, 27, 30, 38, 43, 45, 47, 68, 71, 83, 95, 97, 100, 103, 131, 145, 206, 210, 215, 261, 267, 281, 283, 289, 293, 297, 313, 319, 320, 325-326, 329, 336, 357, 358-359



- **Use methods of proof, ie. direct, indirect, paragraph, or contradiction**  
37, 258I, 260A-260B, 260-261, 262-265, 274-275, 303, 306-307, 310, 328B, 402, 496I

## COMMUNICATION

### *Indicator Statement:*

**Present mathematical ideas using words, symbols, visual displays, or technology**

### *Objectives(s):*

- **Use multiple representations to express concepts or solutions**  
2I, 146A-146B, 146-147, 190J, 192, 194, 196B, 196-197, 202, 225, 246-247, 260A, 260-261, 262-264, 274-275, 310-311, 314I, 328B, 338A, 426J
- **Express mathematical ideas orally**  
2I-2J, 64I-64J, 94B, 124I-124J, 128B, 196B, 226B, 227, 258I-258J, 288, 314I-314J, 333, 368I-368J, 426I-426J, 496I-496J, 610I-610J, 678I-678J
- **Explain mathematically ideas in written form**  
2J, 5, 9, 11, 15, 31, 33, 41, 43, 69, 71, 73, 81, 89, 97, 103, 127, 197, 211, 215, 216A-216B, 216-217, 231, 237, 258J, 261, 283, 285, 291, 293, 317, 327, 339, 347, 371, 377, 381
- **Express solutions using concrete materials**  
2I-2J, 80B, 82B, 126A-126B, 260A, 262A, 265, 368I-368J, 402B, 436A-436B, 436-437, 440, 610I, 678I-678J
- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
9, 14A, 24B, 28A, 42A, 58, 63, 76A-76B, 76-77, 81, 115, 117, 121, 140A-140B, 140-142, 144-145, 190J, 198A, 226A, 228A, 236A-236B, 236-237, 265, 267, 270A-270B, 270-273, 610I
- **Explain solutions in written form**  
21, 27, 39, 64J, 85, 102A-102B, 102-103, 105, 119, 258I, 323, 349, 368J, 393, 397, 407, 496I-496J, 610I-610J, 678I
- **Ask questions about mathematical ideas or problems**  
135, 212B, 216B, 228B, 236A, 390B, 406B
- **Give or use feedback to revise mathematical thinking**  
64I-64J, 146A, 380A-380B, 380-381, 382-383, 388A, 390A, 415, 419, 422

**CONNECTIONS*****Indicator Statement:***

**Relate or apply mathematics within the discipline, to other disciplines, and to life**

***Objectives(s):***

- **Identify mathematical concepts in relationship to other mathematical concepts**  
46, 54, 64J, 190J, 215, 239, 276A, 426J, 428B, 431
  
- **Identify mathematical concepts in relationship to other disciplines**  
4B, 10B, 20, 26, 28B, 36B, 38, 44B, 68, 72B, 76B, 84, 88, 96B, 100, 104B, 128B, 130, 134, 140B, 192B, 194, 204B, 210, 236B, 266B, 270B, 272, 276B, 290, 318B, 334
  
- **Identify mathematical concepts in relationship to life**  
4B, 40B, 40-41, 76B, 90B, 101, 124J, 140B, 190I, 192B, 193, 195, 222A, 238B, 260B, 262B, 264, 278-279, 280B, 284B, 320B, 322-323, 324B, 326, 348-349, 370B, 428B
  
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
18A, 22A-22B, 22, 45, 70A-70B, 70-71, 78-79, 80A-80B, 80-81, 82A-82B, 82-85, 94A-94B, 94-95, 112-113, 116-118, 120, 136A, 314I, 316A, 316-317, 318A-318B, 320A-320B, 320-323, 324A-324B, 324-326, 329, 336-337, 360-361, 368I-368J, 372A-372B, 373, 384A-384B, 384-385, 386A-386B, 386-387, 388A-388B, 388-389, 390-391, 392A, 392-393, 394-395, 396A-396B, 396, 402, 406A, 414-415, 416, 418, 419-421, 423, 610J

**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Grade Four**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns and functions**

***Objectives(s):***

- **Represent or analyze numeric patterns using skip counting**  
***Assessment Limits:***  
**Use patterns of 3,4,6,7,8, or 9 starting with any whole number (0 – 100)**  
51, 56, 76A, 80A, 90A-90B, 90-91, 92, 223, 275, 303, 335, 355, 449
- **Create a one operation (+ or -) function table to solve a real world problem**  
141-142, 164B
- **Complete a function table using a one operation (+, -,  $\times$ ,  $\div$  with no remainders) rule**  
***Assessment Limits:***  
**Use whole numbers (0 – 50)**  
51, 164A, 164-165, 245, 423, 489, 551, 613
- **Describe the relationship that generates a one operation rule**  
60J, 164B, 164-165, 551

***Indicator Statement:***

**Identify, describe, extend, analyze, or create a non-numeric growing or repeating pattern**

***Objectives(s):***

- **Generate a rule for the next level of the growing pattern**  
***Assessment Limits:***  
**Use at least 3 levels but no more than 5 levels**  
164, 380A

- **Generate a rule for a repeating pattern**  
**Assessment Limits:**  
Use no more than 4 objects in the core of the pattern  
90A, 91, 355, 439
- **Create a non-numeric growing or repeating pattern**  
90B, 478B

## EXPRESSIONS, EQUATIONS, AND INEQUALITIES

### **Indicator Statement:**

Write and identify expressions

### **Objectives(s):**

- **Represent numeric quantities using operational symbols (+, -, ×, ÷ with no remainders)**  
**Assessment Limits:**  
Use whole numbers (0 – 100)  
94A-94B, 94-95, 96A-96B, 96-97, 98A, 99, 160A-160B, 160-163, 191, 245, 262A, 384A, 459, 468A, 520A, 613
- **Determine equivalent expressions**  
**Assessment Limits:**  
Use whole numbers (0 – 100)  
Opportunity to meet this objective can be found on pages 96A-96B, 96-97, 98A-98B, 98-99

### **Indicator Statement:**

Identify, write, solve, and apply equations and inequalities

### **Objectives(s):**

- **Represent relationships by using relational symbols (>, <, =) and operational symbols (+, -, ×, ÷) on either side**  
**Assessment Limits:**  
Use operational symbols (+, -, ×) and whole numbers (0 – 200)  
32A, 222A, 226A, 396B, 396-398, 421, 430, 478A, 500A, 632A
- **Find the unknown in an equation with one operation**  
**Assessment Limits:**  
Use multiplication (×) and whole numbers (0-100)  
9, 51, 100A-100B, 100-101, 166A-166B, 166-167, 191, 195, 245, 303, 355, 423, 489, 551

**NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS*****Indicator Statement:***

Locate points on a number line and in a coordinate plane

***Objectives(s):***

- **Represent mixed numbers and proper fractions on a number line**

***Assessment Limits:***

**Use proper fractions with a denominators of 6, 8, or 10**

504A-504B, 504-506, 524A, 530B, 535, 539, 540B, 550, 552, 556

- **Identify positions in a coordinate plane**

***Assessment Limits:***

**Use the first quadrant and ordered pairs of whole numbers (0 - 20)**

212A-212B, 212-215, 219, 224-225, 242-243, 245, 248, 252, 338A, 355

- **Represent decimals on a number line**

622I, 630-631, 632-633

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES*****Indicator Statement:***

Analyze the properties of plane geometric figures

***Objectives(s):***

- **Identify properties of angles using manipulatives and pictures**

432I, 443, 450, 490

- **Identify and describe angles in relationship to another angle**

***Assessment Limits:***

**Use acute, right, or obtuse angles**

441, 444A, 467, 490

- **Identify parallel and intersecting line segments**

440A-440B, 441-442, 447, 450, 494

**Indicator Statement:****Analyze geometric relationships****Objectives(s):**

- Compare and classify angles in geometric figures and pictures

**Assessment Limits:****Use an acute, right, and obtuse angle in relationship to another angle**

432I, 442, 444A-444B, 445-446, 447, 450-451, 458A, 491, 494

**SOLID GEOMETRIC FIGURES****Indicator Statement:****Analyze the properties of solid geometric figures****Objectives(s):**

- Identify cones, cylinders, prisms, and pyramids

**Assessment Limits:****Use cones or cylinders**

50, 354, 368A, 436-437, 450, 478, 494

- Describe solid geometric figures by the number of edges, faces, or vertices

**Assessment Limits:****Use triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms**

434A-434B, 434-436, 439, 450-451, 460B, 461, 486, 496

**Indicator Statement:****Analyze the relationship between plane geometric figures and surfaces of solid geometric figures****Objectives(s):**

- Compare a plane figure to surfaces of solid geometric figure

**Assessment Limits:****Compare squares to cubes, triangles/rectangles to triangular pyramids/rectangular pyramids**

437, 451, 455, 490, 494

## TRANSFORMATIONS

**Indicator Statement:**

Analyze a transformation

**Objectives(s):**

- Identify and describe the results of translations, reflections, and rotations

**Assessment Limits:**

Use along a horizontal line translation, reflection over a vertical line, or rotation of 90° clockwise around a given point of a geometric figure or picture

452A-452B, 452-455, 462-463, 486, 491, 495, 504A

## STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

## MEASUREMENT SCALES

**Indicator Statement:**

Read customary and metric measurement scales

**Objectives(s):**

- Estimate and determine length and height

**Assessment Limits:**

Use the nearest centimeter or  $\frac{1}{4}$  inch

588B, 588-589, 590A-590B, 590-591, 593, 604-605, 612, 616, 620, 622J

- Estimate and determine weight/mass

594A, 594, 622J

- Estimate and determine capacity

592A-592B, 592

## Measurement Tools

**Indicator Statement:**

Measure in customary and metric units

**Objectives(s):**

- Select and use appropriate tools and units

**Assessment Limits:**

Use the nearest millimeter or  $\frac{1}{4}$  inch with a ruler

588A-588B, 588-589, 590A-590B, 590-591, 601, 604-605, 610, 616, 620, 622J

**APPLICATIONS IN MEASUREMENT****Indicator Statement:**

Apply measurement concepts

**Objectives(s):**

- **Determine perimeter**

**Assessment Limits:**

Use polygons with no more than 6 sides given the length of the sides in whole numbers (0 – 100)

50, 244, 320A, 422, 432J, 464A-464B, 464-467, 468B, 470-471, 474A-474B, 474-475, 477, 478A-478B, 478, 480-481, 487, 488, 493, 496, 521, 550, 624A

- **Determine area**

**Assessment Limits:**

Use rectangles with the length of the sides in whole numbers (0 – 100)

198A, 432J, 468A-468B, 468-470, 474A, 474-475, 480-481, 487, 488, 493, 497, 513, 550

- **Determine elapsed time and end time**

**Assessment Limits:**

Use hour and half hour intervals

50, 196A-196B, 196-197, 198A-198B, 198-199, 201, 202, 215, 219, 234A, 234, 488, 512B, 593, 612

**Indicator Statement:**

Calculate equivalent measurements

**Objectives(s):**

- **Determine equivalent units of length**

**Assessment Limits:**

Use 36 inches = 1 yard and whole numbers (0-100)

50, 289, 390A, 540, 560J, 578A, 588B, 596B, 596-599, 602B, 602, 604-605, 611, 617, 621

- **Determine equivalent units of time**

192A-192B, 192-194, 201, 202-203, 243, 244, 246, 315, 507

- **Determine equivalent units of capacity and weight within the same system**

302, 592A-592B, 594B, 596A-596B, 596-599, 600A, 602B, 604-605, 611, 612-613, 621



**STANDARD 4.0—KNOWLEDGE OF STATISTICS:**

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

**DATA DISPLAYS*****Indicator Statement:***

**Collect, organize, and display data**

***Objectives(s):***

- **Collect data by conducting surveys to answer a question**  
230A-230B, 230-231
- **Organize and display data in line plots and frequency tables using a variety of categories and sets of data**

***Assessment Limits:***

**Use line plots with no more than 20 pieces of data and a range of no more than 10 and whole numbers (0 – 100)**

188J, 206A-206B, 207, 224-225, 243

**DATA ANALYSIS*****Indicator Statement:***

**Analyze data**

***Objectives(s):***

- **Interpret line plots**  
***Assessment Limits:***  
**Use no more than 20 pieces of data with a range no more than 10 and whole numbers (0 – 100)**  
51, 188J, 206A-206B, 206-207, 211, 247, 251, 355, 423, 461

- **Interpret line graphs**  
***Assessment Limits:***  
**Use the x-axis representing no more than 6 time intervals, the y-axis consisting of no more than 10 intervals with scales as factors of 100 using whole numbers (0 – 100)**

96A, 216A-216B, 216-218, 222A, 223, 224-225, 229, 242, 245, 248-249, 252, 342A, 423

**Indicator Statement:****Describe a set of data****Objectives(s):**

- **Determine median, mode, and range**

**Assessment Limits:****Use no more than 8 pieces of data using whole numbers (0 – 100)**

188J, 226A-226B, 226-229, 231, 234B, 236-237, 242-243, 249, 253, 303, 471, 489, 581, 613

- **Model the mean of a set of data**

404A-404B

**STANDARD 5.0—KNOWLEDGE OF PROBABILITY:**

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

**THEORETICAL PROBABILITY****Indicator Statement:****Determine the probability of one event****Objectives(s):**

- **Express the probability as a fraction**

**Assessment Limits:****Use a sample space of no more than 6 outcomes**

286A, 522A, 590A

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE****Indicator Statement:****Apply knowledge of whole numbers and place value**

**Objectives(s):**

- Read, write, and represent whole numbers using symbols, words, and models

**Assessment Limits:****Use whole numbers (0 - 1,000,000)**

2I, 4A-4B, 4-7, 8A-8B, 8-9, 10A-10B, 10-11, 14-15, 16A, 22A-22B, 22, 40A, 40, 48-49, 52, 56, 215, 231, 244, 413

- Express whole numbers in expanded form

**Assessment Limits:****Use whole numbers (0 - 1,000,000)**

4B, 4, 9

- Identify the place value of a digit in a number

**Assessment Limits:****Use whole numbers (0 - 1,000,000)**

4A-4B, 4-7, 8B, 8-9, 14-15, 19, 21, 40B, 41, 48, 52, 56, 79, 631

- Compare, order, and describe whole numbers

**Assessment Limits:****Use no more than 4 whole numbers with or without using the symbols (<, >, =) and whole numbers (0 - 1,000,000)**

16A-16B, 16-19, 20A-20B, 20-21, 26-27, 30A, 40B, 40-41, 48-49, 50, 53, 57, 68A, 244, 302, 354, 408A, 422, 523

**Indicator Statement:**

Apply knowledge of fractions and decimals

**Objectives(s):**

- Read, write, or represent fractions of a single region using symbols, words, or models

**Assessment Limits:****Use denominators 6, 8, and 10**

498I, 500A-500B, 500-501, 505-506, 509, 514-515, 548, 556

- Read, write, or represent proper fractions of a set which has the same number of items as the denominator using symbols, words, or models

**Assessment Limits:****Use denominators of 6,8, and 10 with sets of 6, 8, and 10, respectively**

502-503, 507, 512A-512B, 513, 514-515, 556

- **Read, write, or represent decimals using symbols, words or models**  
**Assessment Limits:**  
**Use no more than 2 decimal places and numbers (0 – 100)**  
28A-28B, 28-29, 34A-34B, 34-37, 43, 49, 55, 59, 85, 519, 567, 612, 624A-624B, 624-627, 628A-628B, 628-629
- **Express decimals in expanded form**  
**Assessment Limits:**  
**Use no more than 2 decimal places and numbers (0 - 100)**  
28B, 28-29, 31, 43, 49, 58, 628B, 628-629
- **Compare fractions or mixed numbers with or without using the symbols (<, > or =)**  
**Assessment Limits:**  
**Use like denominators and no more than 3 numbers (0 - 20)**  
522A-522B, 523, 527, 528-529, 534A, 534-535, 537, 543, 549, 554, 558-559
- **Simplify fractions**  
520A-520B, 520-521, 523, 528-529, 548, 554, 557, 574A-574B, 574-575, 602A, 610-611, 618-619
- **Compare, order, or describe decimals with or without using the symbols (<, >, or =)**  
**Assessment Limits:**  
**Use no more than 3 decimals with no more than 2 decimal places and numbers (0 – 100)**  
622I, 630A-630B, 630-631, 633, 644

**Indicator Statement:**

Apply knowledge of money

**Objectives(s):**

- **Compare the value of sets of mixed currency**  
**Assessment Limits:**  
**Use 2 sets of mixed currency and money (\$0 - \$100)**  
31, 550
- **Determine the change from \$100**  
32A-32B, 32-33, 37, 42-43, 48-49, 50, 55, 59, 73, 102A, 601, 621

**NUMBER THEORY****Indicator Statement:****Apply number relationships****Objectives(s):**

- **Identify and use divisibility rules**

**Assessment Limits:****Use the rules for 2, 5, or 10 with whole numbers (0 – 1000)**

402A-402B, 402-403, 405, 411, 421, 422-423, 427, 430

- **Identify factors**

**Assessment Limits:****Use whole numbers (0 – 24)**

122J, 520A-520B, 520-521, 554, 568

- **Identify multiples**

**Assessment Limits:****Use the first 5 multiples of any single digit whole number**

516A, 524B, 563, 568A-568B, 579

**NUMBER COMPUTATION****Indicator Statement:****Analyze number relations and compute****Objectives(s):**

- **Add whole numbers**

**Assessment Limits:****Use up to 3 addends with no more 4 digits in each addend and whole numbers (0 - 10,000)**

7, 20A, 50, 62A-62B, 62-63, 64A, 67, 74-75, 76B, 76-77, 78, 80A-80B, 81, 85, 92-93, 102, 235, 263, 264A, 289, 311, 567, 633

- **Subtract whole numbers**

**Assessment Limits:****Use a minuend and subtrahend with no more than 4 digits in each and whole numbers (0 – 9999)**

4A, 8A, 64A-64B, 64-67, 74-75, 82A-82B, 82-84, 86A, 92-93, 102B, 102, 234, 263, 289, 292, 311, 412, 422, 478

- **Multiply whole numbers**

**Assessment Limits:**

Use a one 1-digit factor by up to a 3-digit factor using whole numbers (0 – 1000)

50, 122I-122J, 124A-124B, 124-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-137, 208A, 211, 254J, 256A-256B, 256-257, 262A-262B, 262-263, 264A-264B, 264-267, 268-269, 270A-270B, 270-273, 274A-274B, 274-275, 281, 282A-282B, 282-283, 284, 287, 292A, 292, 300-301, 302, 304-305, 308-309, 311, 336A, 344-345, 397

- **Divide whole numbers**

**Assessment Limits:**

Use up to a 3-digit dividend by a 1-digit divisor and whole numbers with no remainders (0 - 999)

146A-146B, 146-147, 150A-150B, 150-151, 152A-152B, 152-153, 261, 287, 364J, 373, 374A-374B, 374-376, 378-379, 380A-380B, 380-383, 386A-386B, 388-389, 390B, 391, 396B, 396-399, 400-401, 413, 414, 420, 424, 428-430, 501, 533, 701

- **Add and subtract proper fractions and mixed numbers**

**Assessment Limits:**

Use 2 proper fractions with a single digit like denominators, 2 mixed numbers with single digit like denominators, or a whole number and a proper fraction with a single digit denominator and numbers (0 – 20)

562A, 564B, 564-567, 571, 572-573, 574A-574B, 574-577, 586, 587, 602A, 602, 610-611, 618-619

- **Add 2 decimals**

**Assessment Limits:**

Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100)

77, 81, 92, 101, 206A, 244, 638A-638B, 638-640, 642A-642B, 642-645

- **Subtract decimals**

**Assessment Limits:**

Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100)

84, 87, 92-93, 103, 638A-638B, 638-640, 642A-642B, 642-645

**Indicator Statement:**  
**Estimation****Objectives(s):**

- **Determine the approximate sum and difference of 2 numbers**

**Assessment Limits:****Use no more than 2 decimal places in each and numbers (0 – 100)**

74, 261, 636A-636B, 636-637

- **Determine the approximate product or quotient of 2 numbers**

**Assessment Limits:****Use a 1-digit factor with the other factor having no more than 2-digits or a 1-digit divisor and no more than a 2-digit dividend and whole numbers (0 – 1000)**

29, 31, 254I, 258A-258B, 258-261, 269, 271, 285, 308-309, 345, 364J, 370-371, 378-379, 380A, 389, 391, 420-421

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING****Indicator Statement:****Apply a variety of concepts, processes, and skills to solve problems****Objectives(s):**

- **Identify the question in the problem**

12B, 12-13, 14-15, 38A-38B, 38-39, 42, 44-45, 53, 57, 102B, 222, 230A, 278, 326, 396, 474, 478B, 512, 584

- **Decide if enough information is present to solve the problem**

82A, 366A, 540B

- **Make a plan to solve a problem**

2J, 12A-12B, 20A, 24A-24B, 24, 94, 208A, 222, 278, 290A-290B, 290-291, 294-295, 301, 326, 336A, 396, 430, 474, 512, 584, 602B

- **Apply a strategy, ie draw a picture, guess and check, finding a pattern, writing an equation**

40A-40B, 40-41, 102A-102B, 102-103, 140A-140B, 140-142, 168A-168B, 168-169, 204A, 222A-222B, 222-223, 234A-234B, 234-235, 278A-278B, 278-281, 292A-292B, 292-293, 310, 326A-326B, 326-329, 330, 396B, 396-398, 460A, 478A-478B, 478-479, 512A-512B, 512-513, 540A-540B, 540-541, 602A-602B, 602-603

- **Select a strategy, ie. draw a picture, guess and check, finding a pattern, writing an equation**  
12A, 16A, 24A-24B, 27, 54, 86A-86B, 86-87, 92, 190A, 254I-254J, 273, 282A-282B, 282-283, 285, 326A, 329, 364J, 562A, 622I
- **Identify alternative ways to solve a problem**  
24A-24B, 24-25, 26, 54, 71, 86A-86B, 254I-254J, 275, 282A-282B, 282-283, 465, 467, 488, 527, 560I-560J, 644
- **Show that a problem might have multiple solutions or no solution**  
2J, 60J, 432J, 461, 498I
- **Extend the solution of a problem to a new problem situation**  
2I-2J, 7, 28B, 51, 156A-156B, 156-157, 200A, 229, 295, 397, 422, 432I, 476A, 478, 519, 560I, 622I

## REASONING

### *Indicator Statement:*

Justify ideas or solutions with mathematical concepts or proofs

### *Objectives(s):*

- **Use inductive or deductive reasoning**  
7, 10A, 278A, 408A, 412A, 460B, 513, 560I, 562A, 584A-584B, 584-585, 586-587, 589, 611, 619, 622I
- **Make or test generalizations**  
302-303, 355, 380A, 423, 439, 449, 461, 489, 496, 563, 613
- **Support or refute mathematical statements or solutions**  
37, 38-39, 42-43, 66, 78, 85, 210, 256, 271, 273, 285, 376, 438A, 438, 451, 454, 489, 500-501, 515, 519, 587, 597-598, 644
- **Use methods of proof, ie. direct, indirect, paragraph, or contradiction**  
100A, 380-381, 383, 386A, 386-387, 390, 396, 421, 562B



**COMMUNICATION****Indicator Statement:**

**Present mathematical ideas using words, symbols, visual displays, or technology**

**Objectives(s):**

- **Use multiple representations to express concepts or solutions**  
4A, 10A-10B, 10-11, 14-15, 52, 56, 59, 94A-94B, 202, 243, 250, 300, 354, 516A-516B, 516-519, 530A-530B, 530-533, 541, 542-543, 558, 624A-624B, 624-627
- **Express mathematical ideas orally**  
2I-2J, 10B, 60I-60J, 76-77, 188I-188J, 254I-254J, 256, 364J, 432I-432J, 498I-498J, 560I-560J, 622I-622J, 636
- **Explain mathematically ideas in written form**  
13, 19, 21, 23, 25, 39, 71, 73, 91, 154A-154B, 154-155, 195, 199, 207, 215, 219, 223, 229, 281, 283, 291, 343, 346, 389, 413, 437, 447, 460A-460B, 460-461, 475, 503, 507, 521, 523, 535, 538A-538B, 538-539, 541, 577, 589, 591, 593, 595, 622J, 627, 637, 645
- **Express solutions using concrete materials**  
2I, 102B, 254J, 256A-256B, 264A-264B, 292A, 374A, 374-375, 377, 412A, 432J, 474A-474B, 474-475, 493, 638A-638B
- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
2J, 23, 29, 32A, 40A, 62A, 101, 140A-140B, 140-142, 222A-222B, 222-223, 267, 273, 290A-290B, 290-291, 292A, 294-295, 301, 302, 326A-326B, 326-329, 330-331, 332A, 335, 353, 357, 361, 396B, 396-398, 443, 447, 455, 501, 512A-512B, 512-513, 514, 530A, 549, 553, 557, 567
- **Explain solutions in written form**  
60I, 63, 67, 81, 95, 97, 257, 263, 273, 342A-342B, 342-343, 377, 498I-498J, 599, 631, 641
- **Ask questions about mathematical ideas or problems**  
12B, 204B, 347, 564B, 573, 600A
- **Give or use feedback to revise mathematical thinking**  
60I, 278A-278B, 278-281, 284, 310, 392A, 566

**CONNECTIONS****Indicator Statement:**

Relate or apply mathematics within the discipline, to other disciplines, and to life

**Objectives(s):**

- **Identify mathematical concepts in relationship to other mathematical concepts**  
82B, 192A-192B, 192-194, 226A-226B, 226-229, 235, 254J, 437, 451, 455, 490, 494, 588A-588B, 592A-592B, 624A-624B, 624-627, 642B
- **Identify mathematical concepts in relationship to other disciplines**  
4B, 8B, 32B, 34B, 38B, 76B, 90B, 102B, 194, 206B, 210, 214, 218, 228, 260, 267, 270B, 274B, 280, 282B, 326B, 328, 404B, 434B, 440B, 452B, 468B, 500B, 512B, 518, 522B, 524B, 526, 540B, 564B, 584B, 592B, 638B, 642B
- **Identify mathematical concepts in relationship to life**  
32A-32B, 32-33, 40-41, 68B, 80B, 100B, 103, 190A, 196B, 197, 215, 222B, 273, 293, 345, 376, 382, 388, 405, 466, 470, 592B, 603, 636B
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
51, 102, 148A-148B, 148-149, 256A, 262A-262B, 262-263, 264A-264B, 264-265, 267, 274A, 303, 304-305, 364J, 379, 420, 560I

**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Grade Five**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns and functions**

***Objective(s):***

- **Interpret and write a rule for a one operation (+, -,  $\times$ ,  $\div$  with no remainders) function table**

***Assessment Limits:***

**Use whole numbers or decimals with no more than 2 decimal places (0 – 1000)**

55, 106A-106B, 106-107, 112, 118-119, 249, 694J

- **Determine approximate product and quotient of whole numbers**  
18A, 68A-68B, 68-69, 130I-130J, 138A-138B, 138-141, 146-147, 159, 200I, 474A, 708

- **Complete a one operation (+, -,  $\times$ ,  $\div$  with no remainders) function table**

***Assessment Limits:***

**Use whole numbers or decimals with no more than two decimal places (0 – 200)**

108A, 119, 698

- **Apply a given two operation rule for a pattern**

***Assessment Limits:***

**Use two operations (+, -,  $\times$ ) and whole numbers (0 – 100)**

176B, 176-178, 270A

**EXPRESSIONS, EQUATIONS, AND INEQUALITIES****Indicator Statement:**

Write and identify expressions

**Objective(s):**

- Represent unknown quantities with one unknown and one operation (+, -, ×, ÷ with no remainders)

**Assessment Limits:**

Use whole numbers (0 – 100) or money (\$0 - \$100)

38A, 100A-100B, 100-102, 104A-104B, 104-105, 110B, 112, 118, 249, 398A, 460A, 718A

- Evaluate algebraic expressions with one unknown, one operation and whole numbers

**Assessment Limits:**

Use (+, -) and (0 - 1000) or (×, ÷ with no remainders) and a replacement set of whole numbers no more than 9 (0 - 100)

38A, 55, 108A-108B, 108-109, 112, 119, 163, 249, 398A, 718A

- Use parenthesis to evaluate a numeric expression

172A-172B, 172-173, 249, 617, 699, 701

**Indicator Statement:**

Identify, write, solve, and apply equations and inequalities

**Objective(s):**

- Represent relationships by using the appropriate relational symbols (>, <, =) and one operational symbol (+, -, ×, ÷ with no remainders) on either side

**Assessment Limits:**

Use whole numbers (0 – 400)

484A, 484-485, 490A, 696A-696B, 696, 700A-700B, 700, 706A-706B, 706-708, 710-711, 715, 716A

- Find the unknown in an equation with one operation (+, -, ×, ÷ with no remainders)

**Assessment Limits:**

Use whole numbers (0 – 2000)

337, 475, 484A, 484-485, 490A, 517, 694I, 698, 700A-700B, 700-701, 702A-702B, 702-703, 706B, 707-709, 710-711, 716A

**NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS****Indicator Statement:**

Locate points on a number line and in a coordinate plane

**Objective(s):**

- Represent decimals and mixed numbers on a number line

**Assessment Limits:**

Use decimals with no more than two decimal places (0 – 100) or mixed numbers with denominators of 2, 3, 4, 5, 6, 8, or 10 (0 - 10)

8A, 12B, 64J, 404A-404B, 404-405, 408-409, 429, 430A-430B, 430-431, 461

- Create a graph in a coordinate plane

**Assessment Limits:**

Use the first quadrant and ordered pairs of whole numbers (0 – 50)

174A-174B, 174-175, 651, 652A-652B, 652, 724

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES****Indicator Statement:**

Analyze the properties of plane geometric figures

**Objective(s):**

- Identify and describe relationships of lines and line segments in geometric figures or pictures

**Assessment Limits:**

Use parallel or perpendicular lines and line segments

328B, 330-331, 335, 336B, 372A, 516

- Identify polygons within a composite figure

**Assessment Limits:**

Use polygons with no more than 8 sides as part of a composite figure comprised of triangles or quadrilaterals

326I, 598A-598B, 599-600

- Identify and describe the radius and diameter of a circle

336A-336B, 336-337, 338, 341

**Indicator Statement:****Analyze geometric relationships****Objective(s):**

- Compare or classify quadrilaterals by length of sides and measures of angles (Include the angle symbol  $\angle ABC$ )

**Assessment Limits:****Use squares, rectangles, rhombi, parallelograms, and trapezoids**

54, 248, 340A-340B, 346A-346B, 346-348, 516

- Compare triangles by sides

326J, 342A-342B, 342, 344, 372B, 373, 516, 647

**SOLID GEOMETRIC FIGURES****Indicator Statement:****Analyze the properties of solid geometric figures****Objective(s):**

- Identify and classify pyramids and prisms by the number of edges, faces, or vertices

**Assessment Limits:****Use triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms**

248, 592I, 594A-594B, 594-596, 598A-598B, 598-600, 603

- Identify and classify pyramids and prisms by the base

**Assessment Limits:****Use triangular prisms and pyramids or rectangular prisms and pyramids**

248, 594B, 595, 599-600, 603

**Indicator Statement:****Analyze the relationship between plane geometric figures and surfaces of solid geometric figures****Objective(s):**

- Compare a plane figure to surfaces of solid geometric figure

**Assessment Limits:****Compare rectangles to rectangular prisms, triangles/rectangles to triangular prisms, circles/rectangles to cylinders**

592I, 594A-594B, 595-597, 598A

## REPRESENTATION OF GEOMETRIC FIGURES

**Indicator Statement:**

Represent plane geometric figures

**Objective(s):**

- Identify, describe, and draw angles, parallel line segments, and perpendicular line segments

**Assessment Limits:**

Provide their dimensions as whole numbers (0 - 20) or angle measurements ( $0^\circ$  -  $179^\circ$ )

328B, 329-331, 332A-332B, 332-335, 337, 338-339, 345, 349, 363, 516

## CONGRUENCE

**Indicator Statement:**

Analyze similar figures to

**Objective(s):**

- Identify or describe geometric figures as similar

**Assessment Limits:**

Use same shape and different size

360A-360B, 360-362, 370

## TRANSFORMATIONS

**Indicator Statement:**

Analyze a transformation

**Objective(s):**

- Analyze translations, reflections, and rotations of geometric figures

**Assessment Limits:**

Use translation along a vertical line, reflection over a horizontal line, or rotation  $90^\circ$  or  $180^\circ$  around a given point

364A-364B, 364-366, 368A, 368, 397, 399, 516

**STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:**

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

**MEASUREMENT SCALES*****Indicator Statement:***

Read customary and metric measurement scales

***Objective(s):***

- **Estimate and determine weight**  
***Assessment Limits:***  
Use the nearest ounce or gram  
620A, 626A
- **Estimate and determine capacity**  
***Assessment Limits:***  
Use the nearest ounce  
570A, 614A

**MEASUREMENT TOOLS*****Indicator Statement:***

Measure in customary and metric units

***Objective(s):***

- **Select and use appropriate tools and units**  
***Assessment Limits:***  
Measure length to  $\frac{1}{8}$  inch with a ruler  
528A-528B, 531, 532A-532B, 532-533, 535, 570

***Indicator Statement:***

Measure a single angle and angles in a regular polygon

***Objective(s):***

- **Use the nearest degree and acute, right, or obtuse angles**  
332A-332B, 332-335, 338-339, 345, 349, 363



**APPLICATIONS IN MEASUREMENT****Indicator Statement:****Estimate and apply measurement formulas****Objective(s):**

- **Determine perimeter**

**Assessment Limits:****Use polygons with no more than 8 sides and whole numbers (0 – 500) or a closed figure on a grid (0 – 50)**

54, 260A, 540A-540B, 540-541, 545, 572A

- **Determine area**

**Assessment Limits:****Use rectangles and whole numbers (0 – 200) or a closed figure on a grid (0 – 50)**

526I-526J, 548A-548B, 548-549, 550A-550B, 550-551, 552A-552B, 552, 554A-554B, 554, 572A-572B

- **Estimate and determine volume by counting**

592J

Further opportunities to meet this objective can be found on pages 610A-610B, 610-613

**Indicator Statement:****Calculate equivalent measurements****Objective(s):**

- **Determine start, elapsed, and end time**

**Assessment Limits:****Use the nearest minute**

248, 486, 564A-564B, 564-567, 568A, 676A

- **Determine equivalent units of measurement**

**Assessment Limits:****Use equivalent units of seconds, minutes, and hours or pints, quarts, and gallons**

40A, 54, 439, 562A-562B, 562-563, 570B, 614A-614B, 614-615

**STANDARD 5.0—KNOWLEDGE OF STATISTICS:**

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

**DATA DISPLAYS*****Indicator Statement:***

**Collect, organize, and display data**

***Objective(s):***

- **Collect data by conducting surveys to answer a question**  
260A-260B, 260, 269
  
- **Organize and display data in stem leaf plots**  
***Assessment Limits:***  
**Use no more than 20 data points and whole numbers (0 – 100)**  
270A-270B, 271-272
  
- **Organize and display data in line plots**  
***Assessment Limits:***  
**Use no more than 20 pieces of data with a range of no more than 20 and whole numbers (0 – 200)**  
260A-260B, 261, 276A, 277
  
- **Organize and display data in double bar graphs**  
***Assessment Limits:***  
**Use no more than 4 categories and intervals of 1, 2, 5, or 10 and whole numbers (0 – 100)**  
262B, 263-264, 276B, 278, 602A
  
- **Organize and display data in line graphs**  
***Assessment Limits:***  
**Use y-axis with intervals of 1, 2, 4, 5, or 10 and x-axis with no more than 10 time intervals and whole numbers (0 – 100)**  
266A, 268, 644I
  
- **Determine the appropriate type of graph to effectively display data**  
262, 266B, 288A-288B, 288-290, 299, 306A, 306, 503, 517, 731

**DATA ANALYSIS****Indicator Statement:****Analyze data****Objective(s):**

- Interpret and compare data in stem & leaf plot  
**Assessment Limits:**  
Use no more than 20 data points and whole numbers (0 – 100)  
270A-270B, 270-272
- Interpret and compare data in line plots  
**Assessment Limits:**  
Use no more than 20 pieces of data with a range of no more than 20 and whole numbers (0 – 100)  
260A-260B, 261, 276A, 276-277
- Interpret and compare data in double bar graphs  
**Assessment Limits:**  
Use no more than 4 categories and intervals of 1, 2, 5, or 10 and whole numbers (0 – 1000)  
262A-262B, 262-265, 276B, 277-278, 292B, 293, 602A
- Interpret and compare data in double line graphs  
**Assessment Limits:**  
Use y-axis with intervals of 1, 2, 5, or 10 and x-axis with no more than 10 time intervals and whole numbers (0 – 100)  
266B, 291
- Read circle graphs  
**Assessment Limits:**  
Use no more than 4 categories and data in whole numbers or percents which are multiples of 5 and whole numbers (0 – 100)  
286A-286B, 286-287, 517, 669

**Indicator Statement:****Describe a set of data (mean, median, mode)****Objective(s):**

- Determine the mean of a given data set or data display  
**Assessment Limits:**  
Use no more than 8 pieces of data and whole numbers (without remainders) (0 – 1000)  
282A-282B, 283-285, 294, 410A, 500A, 517

- **Apply the range and measures of central tendency to solve a problem or answer a question**  
258I, 273, 279, 282B, 283-284, 306B

**STANDARD 5.0—KNOWLEDGE OF PROBABILITY:**

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

**SAMPLE SPACE*****Indicator Statement:***

**Identify possible outcomes**

***Objective(s):***

- **Determine possible outcomes of independent events**

***Assessment Limits:***

**Use two independent events with no more than 4 outcomes each and an organized list or tree diagram**

258J, 296B, 298, 300A-300B, 300-301

**THEORETICAL PROBABILITY*****Indicator Statement:***

**Determine the probability of one simple event comprised of equally likely outcomes**

***Objective(s):***

- **Make predictions and express the probability as a fraction**

***Assessment Limits:***

**Use a sample space of no more than 20 outcomes**

180A, 249, 302A-302B, 302-304, 412A, 517, 706A

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE*****Indicator Statement:***

**Apply knowledge of fractions, decimals, and place value**

***Objective(s):***

- **Read, write, or represent fractions or mixed numbers using symbols, models, and words**

***Assessment Limits:***

**Use denominators that are factors of 24 and numbers (0 – 200)**

54, 392I-392J, 394A-394B, 394-395, 394-397, 398A-398B, 398-399, 400A-400B, 400-401, 403, 408-409, 413, 427-428, 438A, 438

- **Read, write, or represent decimals using symbols, words, or models**

***Assessment Limits:***

**Use no more than 3 decimal places or percents (0 – 100)**

2I, 8A-8B, 8-9, 13, 21, 52, 111, 427-428, 627, 668B

- **Identify or determine equivalent forms of proper fractions**

***Assessment Limits:***

**Use denominators that are factors of 100, decimals, or percents (0 – 200)**

410A-410B, 410-411, 412A-412B, 412-413, 415, 416A-416B, 416-417, 426A, 458I, 462A, 462, 668A-668B, 670, 672

- **Compare or order fractions with or without using the symbols (<, >, or =)**

***Assessment Limits:***

**Use no more than 4 fractions or mixed numbers with denominators that are factors of 100 and numbers (0 – 100)**

404A-404B, 404-405, 408-409, 418A-418B, 418-419, 420A-420B, 420-423, 463

- **Compare, order, or describe decimals with or without using the symbols (<, >, or =)**

***Assessment Limits:***

**Use no more than 4 decimals with no more than 3 decimal places and numbers (0 – 100)**

12A-12B, 12-13, 17, 20, 27, 44A, 53, 55, 56, 60, 167, 248

**NUMBER THEORY****Indicator Statement:****Apply number relationships****Objective(s):**

- **Identify or describe numbers as prime or composite**

**Assessment Limits:****Use whole numbers (0 – 100)**

164A-164B, 164-166, 248, 415

- **Identify and use rules of divisibility**

**Assessment Limits:****Use rules for 2, 3, 5, 9, or 10 and whole numbers (0 - 10,000)**

162A-162B, 162-163

- **Identify the greatest common factor**

**Assessment Limits:****Use 2 numbers whose GCF is no more than 10 and whole numbers (0 – 100)**

414A-414B, 414-415, 416A-416B, 416-417, 469

- **Identify a common multiple and the least common multiple**

**Assessment Limits:****Use no more than 4 single digit whole numbers**

464A-464B, 464-465, 466A-466B, 466-469, 476A-476B, 501, 516-517, 518-519

**NUMBER COMPUTATION****Indicator Statement:****Analyze number relations and compute****Objective(s):**

- **Multiply whole numbers**

**Assessment Limits:****Use a 3-digit factor by another factor with no more than 2-digits and whole numbers (0 - 10,000)**

54, 66A-66B, 66-67, 70A-70B, 70-71, 72A-72B, 72-75, 110A, 110, 118, 135, 148A, 157, 159, 179, 481, 539, 626

- **Divide whole numbers**  
**Assessment Limits:**  
**Use a dividend with no more than a 4-digits by a 2-digit divisor and whole numbers (0 - 9,999)**  
130J, 132A-132B, 132-134, 136A-136B, 136-137, 146-147, 148A-148B, 148-151, 152A-152B, 152-155, 156A-156B, 156-157, 158A-158B, 158-159, 161, 180A, 180, 200I, 202A-202B, 202-203, 214A-214B, 214-217, 218A-218B, 218-221, 224A-224B, 224-225, 239, 246-247, 251-252, 254-256, 261, 411, 572, 625, 626, 653
- **Interpret quotients and remainders mathematically and in the context of a problem**  
**Assessment Limits:**  
**Use dividend with no more than a 3-digits by a 1 or 2 digit divisor and whole numbers (0 – 999)**  
168A-168B, 168-169, 231, 340A, 341
- **Add and subtract proper fractions and mixed numbers with answers in simplest form**  
**Assessment Limits:**  
**Use denominators as factors of 24 and numbers (0 – 20)**  
460A-460B, 460-461, 462A-462B, 462-463, 466A-466B, 466-468, 472A-472B, 472-473, 476A-476B, 476-477, 478A-478B, 478-480
- **Add decimals including money**  
**Assessment Limits:**  
**Use no more than 4 addends and no more than 3 decimal places in each addend and numbers (0 – 1000)**  
2J, 38A-38B, 38-39, 41, 44, 47, 59, 62-63, 97, 406A, 493, 499, 553, 623
- **Subtract decimals including money**  
**Assessment Limits:**  
**Use a minuend and subtrahend with no more than 3 decimal places and numbers (0 – 1000)**  
40A-40B, 40-41, 46-47, 52, 62-63, 91, 477, 573
- **Multiply decimals**  
**Assessment Limits:**  
**Use a decimal in monetary notation by a single digit whole number and numbers (0 – 100)**  
4A, 64J, 84A-84B, 84-85, 88A-88B, 88-90, 110B, 111, 118, 159, 167, 181, 238, 307, 397, 402A, 499

**Indicator Statement:****Estimation****Objective(s):**

- Determine the approximate sum and difference of decimals

**Assessment Limits:**

Use no more than 3 addends with no more than 3 decimal places in each addend or the difference of a minuend and subtrahend with no more than 3 decimal places and numbers (0 – 1000)

28B, 29-31, 34-35, 38B, 53, 58-59, 372

- Determine approximate product and quotient of whole numbers

**Assessment Limits:**

Use a 1-digit factor with the other factor having no more than 3 digits or a dividend having no more than 3 digits and a 1-digit divisor and whole numbers (0 – 5000)

18A, 68A-68B, 68-69, 130I-130J, 138A-138B, 138-141, 146-147, 159, 200I, 474A, 708

- Determine the product of a decimal in monetary notation by a single digit whole number (0-100)

86A-86B, 86-87

- Determine the approximate product of decimals

**Assessment Limits:**

Use a decimal in monetary notation and a single digit whole number and numbers (0 – 100)

64I, 86-87

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING****Indicator Statement:**

Apply a variety of concepts, processes, and skills to solve problems

**Objective(s):**

- Identify the question in the problem

18A-18, 18-19, 21, 42A-42B, 42-43, 44B, 46-47, 53, 57, 59, 61, 144, 226A-226B, 226-227, 238B, 253, 256, 406B, 406, 572B, 624B, 624, 626B, 676B, 706

- Decide if enough information is present to solve the problem

230A, 406A-406B, 406-407, 408-409, 438B



- **Make a plan to solve a problem**  
32, 34, 36A, 76A-76B, 76-77, 144, 237, 238B, 504A-504B, 504-505, 508, 694I, 706
- **Apply a strategy, ie draw a picture, guess and check, finding a pattern, writing an equation**  
44A-44B, 44-45, 80A-80B, 80-81, 110A-110B, 110-111, 144A-144B, 144-145, 146, 180A-180B, 180-181, 238B, 238-239, 276A-276B, 276-278, 306A-306B, 306-307, 352A-352B, 352-354, 372A-372B, 372-373, 434A-434B, 434-436, 438A-438B, 438-439, 484A-484B, 484-486, 558A-558B, 558-559, 572A-572B, 572-573, 606A-606B, 606-607, 626A-626B, 626-627, 660A-660B, 660-661
- **Select a strategy, ie. draw a picture, guess and check, finding a pattern, writing an equation**  
12A, 32A-32B, 32-33, 42A, 52, 200I-200J, 222A-222B, 222-223, 238B, 255, 487, 592J, 694I, 703
- **Identify alternative ways to solve a problem**  
32A-32B, 32-33, 62, 200I-200J, 526I, 567, 592J, 694I, 700B
- **Show that a problem might have multiple solutions or no solution**  
2I-2J, 355, 392I, 458I, 598B, 606B
- **Extend the solution of a problem to a new problem situation**  
64J, 167, 217, 226A-226B, 226-227, 238, 247, 258J, 285, 305, 326J, 367, 526J

## REASONING

### *Indicator Statement:*

**Justify ideas or solutions with mathematical concepts or proofs**

### *Objective(s):*

- **Use inductive or deductive reasoning**  
156B, 158A, 160A, 258I, 416A, 434A-434B, 434-436, 662A
- **Make or test generalizations**  
112, 118-119, 262B, 292B, 292-293, 340A, 341, 644I, 694J
- **Support or refute mathematical statements or solutions**  
11, 41, 103, 155, 157, 162A, 166, 269, 335, 396, 412A, 601, 709
- **Use methods of proof, ie. direct, indirect, paragraph, or contradiction**  
43, 152A, 153-155, 157, 159, 200I, 255, 462B, 592I, 702-703, 707, 710-711

**COMMUNICATION****Indicator Statement:**

Present mathematical ideas using words, symbols, visual displays, or technology

**Objective(s):**

- **Use multiple representations to express concepts or solutions**  
2I, 14A-14B, 15-17, 395, 410A-410B, 410-411, 412A-412B, 412-413, 427-428, 506B
- **Express mathematical ideas orally**  
2I-2J, 64I-64J, 200I-200J, 258I-258J, 262, 326I-326J, 392I-392J, 400, 458I, 526I-526J, 592I-592J, 644I, 694I-694J, 707
- **Explain mathematically ideas in written form**  
11, 13, 19, 31, 33, 39, 45, 145, 155, 159, 163, 326J, 341, 356A-356B, 356-357, 368B, 401, 405, 407, 411, 413, 415, 458I, 533, 570A-570B, 570-571, 592I, 597, 644I, 664A-664B, 664-665, 720A-720B, 720-721
- **Express solutions using concrete materials**  
132A-132B, 156A, 162A, 238A, 398A-398B, 400A, 458I, 606A-606B, 606-607, 700A-700B, 702A
- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
2J, 28A, 32A, 42A, 44A, 80A-80B, 80-81, 118-119, 132B, 132-134, 145, 146, 148A, 151, 161, 180B, 265, 326I-326J, 332A, 392I-392J, 399, 438, 526I-526J, 536A, 558A-558B, 558-559, 592I, 644I, 654A, 660A-660B, 660-661, 663, 694J, 710, 730A
- **Explain solutions in written form**  
64I-64J, 167, 239, 399, 526J, 531, 592J, 694I, 701, 703
- **Ask questions about mathematical ideas or problems**  
18B, 42B, 44B, 261, 265, 406B, 700B
- **Give or use feedback to revise mathematical thinking**  
35, 64I, 144A, 210A-210B, 210-211, 247, 250, 254, 404A, 406A, 437, 648A

**CONNECTIONS*****Indicator Statement:***

relate or apply mathematics within the discipline, to other disciplines, and to life

***Objective(s):***

- **Identify mathematical concepts in relationship to other mathematical concepts**  
153, 159, 326I, 336A, 336, 484A-484B, 502B, 517, 526J, 568A-568B, 568-569, 592I, 710-711
- **Identify mathematical concepts in relationship to other disciplines**  
10, 16, 144B, 148B, 158B, 238B, 334, 406B, 502B, 507, 528B, 626B, 654B, 700B, 708
- **Identify mathematical concepts in relationship to life**  
8B, 148A-148B, 148-151, 333, 335, 336B, 337, 340B, 340, 426B, 532B, 568B, 623, 624A
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
55, 70A-70B, 70-71, 118, 130J, 258I, 552B, 552, 554A-554B, 555, 626A-626B, 648A, 696A-696B, 696-698, 700A-700B, 700-701, 702A-702B

**Scott Foresman – Addison Wesley Mathematics  
to the  
Maryland Mathematics Voluntary State Curriculum**

**Grade Six**

**STANDARD 1.0—KNOWLEDGE OF ALGEBRA, PATTERNS, OR FUNCTIONS:**

Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

**PATTERNS AND FUNCTIONS**

***Indicator Statement:***

**Identify, describe, extend, and create numeric patterns and functions**

***Objective(s):***

- **Identify and describe sequences represented by a physical model or in a function table**  
142, 193, 212A-212B, 223, 274B, 444A-444B, 445-446, 449, 459, 461, 716A-716B, 717
  
- **Interpret and write a rule for a one-operation (+, -,  $\times$ ,  $\div$ ) function table**  
***Assessment Limits:***  
**Use whole numbers or decimals with no more than two decimal places (0 – 10,000)**  
193, 444A-444B, 445-446, 449, 452, 459, 461, 503, 716A
  
- **Complete a function table with a two-operation rule**  
***Assessment Limits:***  
**Use the operations of (+, -,  $\times$ ) and whole numbers with no more than 10 in the rule (0 – 50) function table**  
716B, 716-717, 721

**EXPRESSIONS, EQUATIONS, AND INEQUALITIES****Indicator Statement:**

Write and evaluate expressions

**Objective(s):**

- Write an algebraic expression to represent unknown quantities  
**Assessment Limits:**  
Use one unknown and one operation (+, -) with whole numbers (0 – 100), fractions with denominators as factors of 24 (0- 50), or decimals with no more than two decimal places (0 – 50)  
24B, 26, 40A, 42-43, 172A, 274A-274B, 274-275, 322A, 434A, 461, 479, 567, 710A-710B, 710-711, 715
- Evaluate an algebraic expression  
**Assessment Limits:**  
Use one unknown and one operation (+, -) with whole numbers (0 – 200), fractions with denominators as factors of 24 (0 – 50), or decimals with no more than two decimal places (0 – 50)  
40B, 40-42, 47, 193, 274A-274B, 275, 427
- Evaluate numeric expressions using the order of operations and whole numbers  
**Assessment Limits:**  
Use no more than 4 operations (+, -, x, ÷ with no remainders) and 1 set of parentheses or a division bar (0 – 100)  
24A-24B, 24-26, 28A-28B, 32A-32B, 32-35, 93, 251
- Represent algebraic expressions using physical models, manipulatives, and drawings  
30B, 32B, 44A

**Indicator Statement:**

Identify, write, solve, and apply equations and inequalities

**Objective(s):**

- Write equations and inequalities to represent relationships  
**Assessment Limits:**  
Use a variable, the appropriate relational symbols (>, <, =), and one operational symbol (+, -, x, ÷) on either side and use fractions with denominators as factors of 24 or decimals with no more than two decimal places (0 – 50)  
44B, 48B, 54, 86A, 112A-112B, 116A-116B, 116-117, 276B, 277, 453, 502A, 520, 650A, 707

- Determine the unknown in a linear equation

**Assessment Limits:**

Use one operation (+, -,  $\times$ ,  $\div$  with no remainders) and use decimals with no more than two decimal places (0 – 100)

28A, 29, 30B, 31, 44B, 44-46, 48A-48B, 48-51, 86A, 89, 112A-112B, 112-113, 116A-116B, 116-117, 179, 193, 387, 520, 531, 650A, 671, 707, 712B

- Solve for the unknown in a one-step inequality  
700A-700B, 700-703
- Identify or graph solutions of a one-step inequality on a number line  
700A-700B, 700-703
- Apply given formulas to problem solving function tables  
444, 446-447, 722B, 724B

**NUMERIC AND GRAPHIC REPRESENTATIONS OF RELATIONSHIPS****Indicator Statement:**

Locate points on a number line and in a coordinate graph

**Objective(s):**

- Graph rational numbers on a number line  
**Assessment Limits:**  
Use integers (-20 to 20)  
406I, 408B, 408-409, 412-413, 459, 462, 466
- Graph ordered pairs in a coordinate plane.  
**Assessment Limits:**  
Use no more than 3 ordered pairs of integers (-20 to 20) or no more than 3 ordered pairs of fractions/mixed numbers with denominators of 2 (-10 to 10)  
440A-440B, 440-443, 447, 448A-448B, 448-449, 452-453, 459, 465, 469, 475, 696J
- Graph linear data from a function table  
448B, 448-449, 452-453, 459, 465, 469, 475, 718, 720, 724B

**Indicator Statement:****Analyze linear relationships****Objective(s):**

- **Identify and describe the change represented in a graph**

**Assessment Limits:****Identify increase, decrease, or no change**

638A-638B, 638-639

- **Translate the graph of a linear relationship onto a table of values that illustrates the type of change**

638B

**STANDARD 2.0—KNOWLEDGE OF GEOMETRY:**

Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.

**PLANE GEOMETRIC FIGURES****Indicator Statement:****Analyze the properties of plane geometric figures****Objective(s):**

- **Identify, describe, and label points, lines, rays, line segments, vertices, angles, and planes using correct symbolic notation**

472A-472B, 472-475, 476A-476B, 476-479, 480A-480B, 480-483, 484A-484B, 484-487, 492-493, 528-529, 530, 532, 536

- **Identify and describe line segments**

**Assessment Limits:****Use diagonal line segments**

472A-472B, 472-475, 484A-484B, 492-493, 529, 532, 536

- **Identify and describe the parts of a circle**

**Assessment Limits:****Use radius, diameter, or circumference**

502A-502B, 502-503, 504-505, 528, 534

**Indicator Statement:****Analyze geometric relationships****Objective(s):**

- **Compare and classify triangles by sides**

**Assessment Limits:****Use scalene, equilateral, or isosceles**

496B, 497-498, 504-505, 530, 539, 545, 551

- **Compare and classify triangles by angle measure**

**Assessment Limits:****Use equiangular, obtuse, acute, or right**

496A-496B, 497-499, 504-505, 539, 551

- **Determine a third angle measure of a triangle given two angle measures**

**Assessment Limits:****Use the concept of the sum of angles in any triangle is  $180^\circ$** 

496-499, 510A, 528, 533, 537

- **Identify and compare the relationship between parts of a circle**

**Assessment Limits:****Use radius, diameter and circumference**

192, 460, 502, 576A-576B, 576-579, 598A, 598, 623

**REPRESENTATION OF GEOMETRIC FIGURES****Indicator Statement:****Represent plane geometric figures****Objective(s):**

- **Draw geometric figures using a variety of tools**

**Assessment Limits:****Draw triangles given the measures of 2 sides and one angle or 2 angles and 1 side using whole numbers (0-20) and angle measures ( $0^\circ$ - $179^\circ$ )**

487, 498-499, 516B, 517-518, 537

- **Identify, describe, or draw a polygon**

**Assessment Limits:****Use the first quadrant given no more than six coordinates**

146, 494A-494B, 494-495, 499, 500A-500B, 500-501, 502B, 504-505, 509, 515, 528-529, 533, 537-538, 641



- Identify or describe angle relationships

**Assessment Limits:**

**Use perpendicular bisectors or angle bisectors**

470I, 476A-476B, 479, 480A-480B, 480-483, 486-487, 492-493, 496, 500-501, 502A, 502-503, 504-505, 509, 519, 522-523, 528-529, 530, 532, 534, 536-538

## CONGRUENCE

**Indicator Statement:**

Analyze congruent figures

**Objective(s):**

- Identify and describe congruent polygons and their corresponding parts  
506A-506B, 506-509, 512-513

## TRANSFORMATIONS

**Indicator Statement:**

Analyze a transformation on a coordinate plane

**Objective(s):**

- Plot the result of one transformation (translation, reflection, rotation) on a coordinate plane  
510, 512, 529, 530, 539

## STANDARD 3.0—KNOWLEDGE OF MEASUREMENT:

Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

## MEASUREMENT TOOLS

**Indicator Statement:**

Measure in customary and metric units

**Objective(s):**

- Select and use appropriate tools and units  
**Assessment Limits:**  
**Measure length to the nearest 1/16 inch with a ruler**  
546A-546B, 546, 548, 550A-550B, 550-551, 562

**APPLICATIONS IN MEASUREMENT****Indicator Statement:****Estimate and apply measurement formulas****Objective(s):**

- **Estimate and determine the area of a polygon**  
**Assessment Limits:**  
**Use triangles and whole number dimensions (0 – 200)**  
540J, 568A-568B, 568-569, 572A-572B, 572-573, 586A
  
- **Estimate and determine the volume of a rectangular prism**  
**Assessment Limits:**  
**Use rectangular prisms and whole number dimensions (0 – 1000)**  
594A-594B, 594-597, 598B, 599
  
- **Estimate and determine the area of a composite figure**  
**Assessment Limits:**  
**Use composite figures with no more than four polygons (triangles or rectangles) and whole number dimensions (0 – 200)**  
572A, 575
  
- **Determine missing dimension of a quadrilateral given the perimeter length**  
**Assessment Limits:**  
**Find length in a quadrilateral given the perimeter with whole number dimensions (0 – 200)**  
160A, 566, 615, 724B
  
- **Determine the missing dimension of rectangles**  
**Assessment Limits:**  
**Find length in a square or rectangle given the area and whole number dimensions (0 – 200)**  
150A, 615, 724B

**STANDARD 4.0—KNOWLEDGE OF STATISTICS:**

Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.

**DATA DISPLAYS*****Indicator Statement:***

**Organize and display data**

***Objective(s):***

- **Organize and display data to make frequency tables**

***Assessment Limits:***

**Use no more than 5 categories or ranges of numbers and total frequencies of no more than 25**

80A, 620A-620B, 628A-628B, 628, 630, 692

- **Organize and display data to make stem & leaf plots**

***Assessment Limits:***

**Use no more than 20 data points and whole numbers (0 – 1000)**

632A-632B, 632-633

- **Organize and display data using a back-to-back stem & leaf plot**

632B

**DATA ANALYSIS*****Indicator Statement:***

**Analyze data**

***Objective(s):***

- **Interpret frequency tables**

***Assessment Limits:***

**Use no more than 5 categories or ranges of numbers and frequencies of no more than 25**

620A-620B, 622, 628A-628B, 628-630, 692

- **Interpret circle graphs**

***Assessment Limits:***

**Use no more than 5 categories using data in whole numbers or percents (0 – 1000)**

200, 461, 514A, 642A-642B, 642-644, 648B

- **Interpret data from a stem & leaf plot**  
193, 632A-632B, 632-633, 637

***Indicator Statement:***

**Describe a set of data**

***Objective(s):***

- **Apply measures of central tendency (mean, median, mode)**  
193, 216A, 426A, 531, 624A-624B, 624-626, 648A, 661, 676B, 676, 725

**STANDARD 5.0—KNOWLEDGE OF PROBABILITY:**

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

**THEORETICAL PROBABILITY**

***Indicator Statement:***

**Determine the probability of one simple event comprised of equally likely outcomes**

***Objective(s):***

- **Express the probability of an event as a fraction.**  
176A, 531, 662A-662B, 662-663, 664A, 664, 666-667, 668A-668B, 668-670, 672A-672B, 672-673, 679, 699
- **Express the probability of an event as a decimal**  
***Assessment Limits:***  
**Use a sample space of 10, 20, 25, or 50 outcomes**  
662-663, 679
- **Express the probability of an event as a percent**  
662-663, 665-667, 672-673, 679

**EXPERIMENTAL PROBABILITY****Indicator Statement:**

Analyze the results of a probability experiment

**Objective(s):**

- Express the experimental probability as a fraction, a decimal, or a percent

**Assessment Limits:**

Use no more than 30 outcomes in the sample space

620B, 664A-664B, 665

**STANDARD 6.0—KNOWLEDGE OF NUMBER RELATIONSHIPS OR**

**COMPUTATION:** Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

**KNOWLEDGE OF NUMBER AND PLACE VALUE****Indicator Statement:**

Apply knowledge of rational numbers and place value

**Objective(s):**

- Read, write, and represent whole numbers

**Assessment Limits:**

Use exponential form with powers of 10 (0 - 10,000)

4A-4B, 4-6, 8A-8B, 8-11, 17, 55, 76A, 108, 110A-110B, 110-111, 546A, 593, 631

- Read, write, and represent integers

**Assessment Limits:**

Use integers from (-100 to 100)

406I, 408A-408B, 408-409

- Identify and determine equivalent forms of fractions as decimals, as percents, and as ratios

**Assessment Limits:**

Use proper fractions with denominators as factors of 100, decimals, percents, or ratios (0 – 1000)

140J, 172A-172B, 172-175, 184-185, 190, 197, 201, 205, 354A-354B, 354, 358A-358B, 358-361, 460, 520B, 520, 530

- Compare and order fractions, decimals alone or mixed together, with and without relational symbols ( $<$ ,  $>$ ,  $=$ )  
**Assessment Limits:**  
Include no more than 4 proper fractions with denominators with factors of 100 or decimals with up to 2 decimal places (0 – 100)  
78A-78B, 78-79, 80B, 167, 169, 176A-176B, 176-179, 185, 191, 192, 197, 201, 205, 501
- Compare and order integers  
406I, 410A-410B, 410-411, 412A-412B, 412-413, 418A, 422A, 425, 450B, 451, 458-459, 460, 462, 466

## NUMBER COMPUTATION

### **Indicator Statement:**

Analyze number relations and compute

### **Objective(s):**

- Add and subtract fractions and mixed numbers and express answers in simplest form  
**Assessment Limits:**  
Use denominators as factors of 60 (0 – 20)  
202I-202J, 204A-204B, 204-205, 206A-206B, 206-209, 217, 218A-218B, 218-219, 220A-220B, 220-222, 460, 530, 545, 549, 554A
- Multiply fractions and mixed numbers and express in simplest form  
**Assessment Limits:**  
Use denominators as factors of 24 not including 24 (0 – 20)  
246I-246J, 248A-248B, 248-250, 252A-252B, 252-255, 258A-258B, 258-259, 276A, 280A-280B, 280, 428A, 448A, 472A, 531, 545, 549
- Multiply decimals  
**Assessment Limits:**  
Use a decimal with no more than 3 digits multiplied by a 2-digit decimal (0 – 1000)  
74J, 90A-90B, 90-92, 97, 103, 120A-120B, 120, 228B, 228, 545, 724
- Divide decimals  
**Assessment Limits:**  
Use a decimal with no more than 5 digits divided by a whole number with no more than 2 digits without annexing zeros (0 – 1000)  
94A-94B, 171, 269

- **Determine a percent of a whole number**

**Assessment Limits:****Use 10%, 20%, 25% or 50% of a whole number (0 – 1000)**

352I-352J, 366A-366B, 366-367, 369, 370A-370B, 371, 380A-380B, 380, 382-383, 388A-388B, 520B, 530, 645

- **Simplify numeric expressions using the properties of addition and multiplication**

**Assessment Limits:****Use the distributive property to simplify numeric expressions and whole numbers (0 – 1000)**

28A-28B, 28-29, 30A-30B, 30-31

**Indicator Statement:**

Estimation

**Objective(s):**

- **Determine the approximate products and quotients of decimals**

**Assessment Limits:****Use a decimal with no more than a 3 digits multiplied by a 2-digit whole number, or the quotient of a decimal with no more than 4 digits in the dividend divided by a 2-digit whole number (0 – 1000)**

74J, 82-83, 520B

**Indicator Statement:**

Analyze ratios, proportions, or percents

**Objective(s):**

- **Represent ratios in a variety of forms**

298I, 300A-300B, 300-301, 302A-302B, 302-304, 306A, 316A-316B, 316-317, 334A-334B

- **Use ratios and unit rates to solve problems**

185, 281, 298I-298J, 300B, 300-301, 302B, 303-304, 306B, 306-309, 316B, 317, 318A-318B, 318-321, 322B, 323, 328A-328B, 328-329, 330A-330B, 330-333, 334B, 334-335, 388B, 388, 421, 450, 508, 550A, 677, 714

**STANDARD 7.0—PROCESS OF MATHEMATICS:**

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**PROBLEM SOLVING*****Indicator Statement:***

**Apply a variety of concepts, processes, and skills to solve problems**

***Objective(s):***

- **Identify the question in the problem**  
20A-20B, 20-21, 36B, 52B, 52-53, 54B, 100A, 116, 156, 180A-180B, 180-181, 182B, 191, 197, 201, 256A, 280B, 490, 494A, 676B, 724B
- **Decide if enough information is present to solve the problem**  
582A-582B, 582-583, 594A, 598B
- **Make a plan to solve a problem**  
36B, 116, 156, 180B, 180, 246I, 274A, 414A-414B, 414-415, 490, 540J, 648, 696J
- **Apply a strategy, ie draw a picture, guess and check, finding a pattern, writing an equation**  
54A-54B, 116A-116B, 116-118, 120A-120B, 120-121, 156A-156B, 156-157, 158-159, 182A-182B, 212A-212B, 212-213, 228A-228B, 228-229, 264A-264B, 264-265, 280A-280B, 280-281, 312A-312B, 312-313, 334A-334B, 334-335, 374A-374B, 374-376, 384A, 388A-388B, 388-389, 436-437, 450A, 458, 464, 468, 490A-490B, 490-491, 492-493, 520A-520B, 520-521, 590A, 598A-598B, 598-599, 676A-676B, 676-677, 706A-706B, 706, 724A-724B, 724-725
- **Select a strategy, ie. draw a picture, guess and check, finding a pattern, writing an equation**  
2I-2J, 36A-36B, 36-37, 74I, 224A-224B, 224-225, 246I, 266A, 298I, 377, 459, 460
- **Identify alternative ways to solve a problem**  
2I-2J, 36A, 36, 74J, 202I, 224A, 298I, 352I-352J, 389, 491, 540J
- **Show that a problem might have multiple solutions or no solution**  
2J, 140I, 142B, 146A, 470I, 490B
- **Extend the solution of a problem to a new problem situation**  
74I, 180A-180B, 180-181, 202I, 246I, 305, 352J, 380A-380B, 380-383, 470I-470J, 499, 540I, 545, 627



**REASONING*****Indicator Statement:***

Justify ideas or solutions with mathematical concepts or proofs

***Objective(s):***

- **Use inductive or deductive reasoning**  
119, 168A, 266A, 430A, 461, 503, 540I, 560A-560B, 560-561, 560-561
- **Make or test generalizations**  
41, 140J, 223, 449, 452, 459, 461, 520A, 540J, 570B
- **Support or refute mathematical statements or solutions**  
35, 51, 52A-52B, 88, 92B, 92, 145, 147, 149, 162, 165, 357, 474, 479, 511, 557, 703
- **Use methods of proof, ie. direct, indirect, paragraph, or contradiction**  
52B, 74J, 87, 160B, 501, 703

**COMMUNICATION*****Indicator Statement:***

Present mathematical ideas using words, symbols, visual displays, or technology

***Objective(s):***

- **Use multiple representations to express concepts or solutions**  
76B, 76-77, 160B, 168A-168B, 168-169, 172A-172B, 172-175, 190, 196, 200, 354A-354B, 354-356, 520-521, 587-589
- **Express mathematical ideas orally**  
2I-2J, 74I-74J, 80, 87, 140I-140J, 143, 160, 202I-202J, 246I-246J, 256, 298I-298J, 322, 352I-352J, 368, 406I, 470I-470J, 514, 540I-540J, 542, 555, 565, 586-587, 649, 654-655, 696J
- **Explain mathematically ideas in written form**  
7, 27, 99, 175, 179, 298J, 449, 495, 499, 512A-512B, 512-513, 522, 545, 549, 551, 553, 564B, 674A-674B, 674-675
- **Express solutions using concrete materials**  
14A, 246I-246J, 270A, 312A-312B, 312-313, 470I-470J, 520A, 540I

- **Express solutions using pictorial, tabular, graphical, or algebraic methods**  
2J, 80A, 98A, 116A-116B, 116-118, 140J, 156A-156B, 156-157, 158-159, 163, 191, 195, 199, 205, 246J, 264A-264B, 264-265, 352I-352J, 368A, 453, 463, 467, 470I-470J, 472A, 490A-490B, 490-491, 492, 495, 503, 516A, 529, 533, 537, 540I-540J, 552A, 580A, 696J
- **Explain solutions in written form**  
2I, 74I-74J, 202I, 246I, 278A-278B, 278-279, 298I, 324A-324B, 324-325, 362A-362B, 362-363, 540I-540J, 557, 561
- **Ask questions about mathematical ideas or problems**  
20A, 156A, 648A
- **Give or use feedback to revise mathematical thinking**  
150A, 152A, 648A, 706A-706B, 706

## CONNECTIONS

### *Indicator Statement:*

relate or apply mathematics within the discipline, to other disciplines, and to life

### *Objective(s):*

- **Identify mathematical concepts in relationship to other mathematical concepts**  
74I, 140J, 176B, 496B, 502, 552A-552B, 552, 570A-570B, 570-571, 598A, 598, 636A, 722A-722B, 722-723, 724A-724B
- **Identify mathematical concepts in relationship to other disciplines**  
18B, 164B, 167, 172B, 176B, 178, 204B, 368B, 472B, 474, 478, 482, 484B, 498, 506B, 508, 514B, 542B, 549, 636B, 654B, 657
- **Identify mathematical concepts in relationship to life**  
16B, 76B, 121, 140I, 180B, 182-183, 226A-226B, 226-227, 229, 386B, 406I, 451, 521, 544, 546A, 556, 651
- **Use the relationship among mathematical concepts to learn other mathematical concepts**  
30A-30B, 30-31, 202J, 246J, 352J, 448B, 448-449, 452-453, 459, 465, 469, 475, 540J, 542A-542B, 542-543, 546B, 547, 552B