

SUMMER SUCCESS[®]: MATH

correlated to

Arizona

Academic Content Standards:

Mathematics

Grades K-8

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EDUCATION GROUP



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SUMMER SUCCESS[®]: MATH

Grades K-8

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Arizona Academic Content Standards: Mathematics

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correlated to
Arizona Academic Content Standards: Mathematics
Kindergarten

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Kindergarten Performance Objectives	Summer Success [®] : Math Kindergarten
PO 1. Make a model to represent a given whole number 0 through 20.	Teacher's Edition: 10, 11, 15, 16, 22, 26, 27, 29, 31, 32, 33, 34, 38, 40, 41, 43, 45, 47, 49, 50, 52, 53, 58, 60, 61, 65, 67, 68, 70, 71, 74, 76, 78, 79, 81, 83, 86, 89, 94, 97, 101, 104, 107, 112, 115, 118, 124, 125
PO 2. Identify orally a whole number represented by a model with a word name and symbol 0 through 20. (Say 3 and write number 3 when presented with three objects.)	Teacher's Edition: 15, 17, 18, 22, 26, 27, 29, 31, 33, 34, 35, 38, 40, 41, 42, 43, 45, 49, 51, 52, 60, 64, 67, 70, 104, 107, 125
PO 3. Count aloud, forward to 20 or backward from 10, in consecutive order (0 through 20).	Teacher's Edition: 16, 30, 33, 38, 40, 42, 47, 49, 50, 52, 53, 58, 60, 61, 65, 65, 67, 70, 71, 74, 76, 78, 79, 81, 85, 86, 88, 89, 92, 93, 96, 98, 99, 106, 110, 111, 112, 114, 115, 117, 120, 123, 125
PO 4. Identify whole numbers through 20 in or out of order.	Teacher's Edition: 15, 16, 17, 18, 22, 26, 27, 29, 30, 31, 32, 33, 34, 35, 38, 40, 41, 42, 44, 45, 47, 48, 49, 50, 51, 52, 53, 58, 60, 61, 62, 63, 64, 65, 67, 68, 70, 71, 74, 76, 78, 79, 81, 83, 85, 86, 88, 89, 92, 94, 95, 96, 97, 99, 104, 106, 107, 110, 112, 114, 115, 117, 120, 123, 124, 125
PO 5. Write whole numbers through 20 in or out of order.	Teacher's Edition: 15, 16, 17, 18, 22, 26, 29, 30, 31, 32, 33, 34, 35, 38, 40, 42, 45, 47, 49, 50, 52, 53, 58, 60, 61, 65, 68, 70, 71, 74, 76, 78, 79, 81, 83, 85, 86, 88, 89, 92, 94, 96, 99, 104, 106, 107, 110, 112, 114, 115, 117, 120, 123, 124, 125
PO 6. Construct equivalent forms of whole numbers, using manipulatives, through 10 (e.g., $\square\square + \square\square = \square\square\square + \square$).	Teacher's Edition: 27, 33, 58, 60, 61, 94, 101, 112

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 7. Compare two whole numbers through 20.	Teacher's Edition: 33, 49, 56, 67, 74, 75, 82, 85, 86, 87, 110, 125
PO 8. Recognize the ordinal numbers through fifth (e.g., first, second, third).	Teacher's Edition: 10, 29, 40, 43, 46, 121, 125
PO 9. Order three of more whole numbers through 20 (least to greatest or greatest to least).	Teacher's Edition: 65, 71, 79, 115
PO 10. Identify penny, nickel, dime, quarter, and dollar by using manipulatives or pictures.	Teacher's Edition: 14, 16, 18, 22, 29, 33, 38, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 75, 78, 79, 81, 83, 85, 88, 89, 92, 96, 99, 100, 106, 117, 123, 126

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 1. Model addition through sums of ten using manipulatives.	Teacher's Edition: 14, 16, 18, 26, 29, 33, 38, 42, 45, 49, 50, 52, 61, 71, 83, 118, 126
PO 2. Model subtraction with minuends of ten using manipulatives.	Teacher's Edition: 16, 56, 60, 63, 67, 70, 71, 74, 78, 81, 85, 88
PO 3. Select the operation to solve word problems using numbers 1 through 9.	Teacher's Edition: 16, 26, 29, 38, 42, 44, 49, 52, 70, 71, 74, 83, 126
PO 4. Solve word problems presented orally using addition or subtraction with numbers through 9.	Teacher's Edition: 16, 18, 26, 27, 29, 33, 38, 42, 49, 52, 60, 71, 74, 78, 126
PO 5. Identify the symbols +, -, =.	Teacher's Edition: 58, 65, 68, 71, 83, 112, 124
PO 6. Use grade-level appropriate mathematical terminology.	Teacher's Edition: 14, 18, 26, 29, 33, 38, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 81, 82, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123

Concept 3: Estimation

Use estimation strategies reasonably and fluently.

Kindergarten Performance Objectives	Summer Success [®] : Math Kindergarten
PO 1. Solve problems using a variety of mental computations and reasonable estimations.	Teacher's Edition: 18, 29, 31, 33, 38, 42, 44, 49, 52, 56, 60, 63, 67, 70, 74, 78, 81, 85, 86, 88, 96, 99, 103, 106, 114, 119, 122, 123, 126

Strand 2: Data Analysis, Probability, and Discrete Mathematics

Concept 1: Data Analysis

Understand and apply data collection, organization and representation to analyze and sort data.

Kindergarten Performance Objectives	Summer Success [®] : Math Kindergarten
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 14, 42, 49, 52, 56, 60, 67, 78, 85, 88, 92, 96, 114
PO 2. Interpret a pictograph.	Teacher's Edition: 29, 33, 52, 67, 70, 85, 88, 103, 106, 117, 120, 123, 126
PO 3. Answer questions about a pictograph.	Teacher's Edition: 29, 33, 52, 67, 70, 85, 88, 103, 106, 117, 120, 123, 126
PO 4. Formulate questions based on data displayed in graphs, charts, and tables.	Teacher's Edition: 33, 52, 67, 70, 81, 85, 88, 99, 103, 106, 117, 120, 123, 126
PO 5. Solve problems based on simple graphs, charts, and tables.	Teacher's Edition: 29, 33, 52, 63, 67, 70, 76, 81, 85, 88, 103, 106, 117, 120, 123, 126

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Kindergarten Performance Objectives	Summer Success [®] : Math Kindergarten
PO 1. Communicate orally a grade-level appropriate pattern.	Teacher's Edition: 14, 15, 16, 17, 18, 26, 29, 31, 38, 42, 43, 45, 49, 50, 60, 63, 65, 70, 71, 78, 81, 85, 88, 92, 96, 99, 103, 104, 106, 114, 117, 120

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 2. Extend simple repetitive patterns using manipulatives.	Teacher's Edition: 14, 16, 17, 18, 26, 29, 31, 38, 42, 43, 45, 49, 50, 59, 60, 63, 65, 70, 71, 78, 81, 85, 88, 92, 96, 99, 103, 104, 106, 114, 117, 120
PO 3. Create grade-level appropriate patterns.	Teacher's Edition: 14, 15, 16, 17, 18, 26, 29, 31, 38, 42, 43, 45, 49, 50, 59, 60, 63, 65, 70, 71, 78, 81, 85, 88, 92, 96, 99, 103, 104, 106, 114, 117, 120

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties Identify patterns and apply pattern recognition to reason mathematically.

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 1. Identify 2-dimensional shapes by attribute (size, shape, number of sides).	Teacher's Edition: 14, 17, 18, 19, 26, 29, 33, 34, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 81, 82, 85, 88, 92, 96, 102, 105, 110, 114, 117, 120, 121, 125
PO 2. Identify concepts and terms of position and size in contextual situations: <ul style="list-style-type: none"> • Inside/outside • Above/below/between • Smaller/larger • Longer/shorter 	Teacher's Edition: 14, 33, 59, 62, 70, 76, 98, 106, 115, 117, 120, 125, 126
PO 3. Identify shapes in different environments (e.g., nature, buildings, classroom).	Teacher's Edition: 14, 18, 26, 52, 74, 92, 96, 99, 106, 120, 126

Concept 4: Measurement - Units of Measure - Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 1. Verbally compare objects according to observable and measurable attributes.	Teacher's Edition: 26, 29, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 85, 88, 92, 96, 103, 114, 120, 126
PO 2. Communicate orally how different attributes of an object can be measured.	Teacher's Edition: 18, 26, 29, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 85, 88, 92, 96, 103, 114, 120, 126
PO 3. Order objects according to observable and measurable attributes.	Teacher's Edition: 26, 29, 42, 49, 52, 60, 63, 67, 70, 74, 78, 85, 88, 92, 96, 103, 114, 120, 126

**Strand 5:
Structure and Logic**

**Concept 2: Logic, Reasoning, Arguments, and
Mathematical Proof**

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Kindergarten Performance Objectives	Summer Success[®]: Math Kindergarten
PO 1. Sort objects according to observable attributes.	Teacher's Edition: 25, 26, 34, 49, 61, 63, 67, 74, 81, 85, 96, 102, 103, 105, 106, 113, 116, 117, 120, 124, 126
PO 2. Provide rationale for classifying objects according to observable attributes (color, size, shape, weight, etc.).	Teacher's Edition: 25, 26, 29, 34, 49, 61, 63, 67, 74, 81, 85, 96, 102, 103, 105, 106, 113, 116, 117, 120, 124



Summer Success[®]: Math © 2000
correlated to
Arizona Academic Content Standards: Mathematics
Grade 1

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Make a model to represent a given whole number 1 through 100.	Teacher's Edition: 14, 17, 18, 26, 27, 29, 31, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 52, 53, 56, 58, 60, 61, 63, 65, 67, 68, 70, 71, 74, 76, 78, 79, 81, 83, 85, 86, 88, 89, 92, 94, 96, 97, 99, 100, 103, 104, 106, 107, 110, 114, 115, 117, 118, 120, 121, 122, 123, 124
PO 2. Identify a whole number represented by a model with a word name and symbol 0 through 100.	Teacher's Edition: 14, 18, 25, 26, 28, 29, 30, 33, 42, 45, 46, 52, 56, 64, 70, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123
PO 3. Count aloud, forward or backward, in consecutive order (0 through 100).	Teacher's Edition: 14, 17, 18, 21, 26, 28, 29, 31, 32, 35, 38, 40, 46, 47, 52, 56, 64, 70, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123
PO 4. Identify whole numbers through 100 in or out of order.	Teacher's Edition: 14, 16, 17, 18, 26, 28, 29, 30, 31, 33, 35, 38, 40, 42, 45, 46, 56, 58, 59, 60, 67, 70, 75, 77, 80, 85, 96, 103, 110, 114, 116, 117, 120, 123
PO 5. Write whole numbers through 100 in or out of order.	Teacher's Edition: 14, 16, 22, 25, 26, 28, 29, 30, 31, 32, 33, 35, 38, 40, 42, 45, 46, 52, 56, 58, 59, 61, 67, 70, 77, 80, 85, 96, 103, 106, 110, 114, 116, 117, 120, 123
PO 6. Construct equivalent forms of whole numbers, using manipulatives or symbols, through 99 (e.g., $15 + 5 = 10 + 10$).	Teacher's Edition: 29, 33, 35, 38, 42, 45, 52, 87, 124
PO 7. State verbally whole numbers, through 100, using correct place value (e.g., a student will read 84 as eight tens and four ones).	Teacher's Edition: 47, 68, 74, 76, 78, 81, 85, 88, 96, 99, 102, 103, 105, 106, 110, 114, 118, 120, 123

Grade 1 Performance Objectives	Summer Success[®]: Math Grade 1
PO 8. Construct models to represent place value concept for ones and tens places.	Teacher's Edition: 47, 63, 65, 67, 68, 76, 78, 81, 85, 88, 96, 99, 102, 103, 105, 106, 110, 114, 117, 118, 120, 123
PO 9. Apply expanded notation to model place value through 99 (e.g., $37 = 3$ groups of ten + 7 units).	Teacher's Edition: 76, 78, 81, 85, 102, 103, 105, 110, 114, 117, 118, 120, 123
PO 10. Identify odd and even whole numbers through 100.	Teacher's Edition: 19, 56, 57, 74, 79, 92, 114
PO 11. Compare two whole numbers through 100.	Teacher's Edition: 21, 25, 28, 32, 33, 45, 46, 74, 77, 80, 92, 99, 102, 105, 111, 112, 117, 124
PO 12. Use ordinal numbers through ten.	Teacher's Edition: 18, 31, 39, 49, 52, 63, 66, 69, 82
PO 13. Order three or more whole numbers through 100 (least to greatest or greatest to least).	Teacher's Edition: 21, 28, 31, 32, 33, 40, 46, 69, 80, 93, 103, 118, 119
PO 14. Make models that represent given fractions (halves).	Teacher's Edition: 38, 61, 99, 103
PO 15. Identify in symbols and in words a model that is divided into equal fractional parts (halves).	Teacher's Edition: 61
PO 16. Identify money by name and value: penny, nickel, dime, quarter, and one dollar.	Teacher's Edition: 4, 18, 26, 29, 42, 45, 49, 52, 56, 58, 60, 67, 70, 74, 78, 81, 85, 86, 88, 92, 93, 95, 97, 98, 99, 106, 110, 111, 117
PO 17. Count money through \$ 1.00 using coins.	Teacher's Edition: 45, 49, 52, 56, 58, 60, 63, 67, 70, 74, 78, 81, 85, 86, 88, 92, 93, 95, 97, 98, 99, 106, 110, 111, 117, 120, 123
PO 18. Identify the value of a collection of coins using the symbols ¢ and \$.	Teacher's Edition: 26, 29, 42, 45, 49, 52, 56, 58, 60, 67, 70, 74, 78, 81, 85, 86, 88, 92, 93, 95, 97, 98, 99, 106, 110, 111, 117, 120, 123

Concept 2: Numerical Operations

Understand and apply numerical operations and their relationship to one another.

Grade 1 Performance Objectives	Summer Success[®]: Math Grade 1
PO 1. Demonstrate the process of addition through sums of 20 using manipulatives.	Teacher's Edition: 21, 23-24, 29, 32, 33, 34, 35, 42, 43, 45, 47, 50, 52, 65, 70, 71, 84, 87, 89, 97, 100, 101, 104

Grade 1 Performance Objectives	Summer Success[®]: Math Grade 1
PO 2. Demonstrate the process of subtraction with minuends of 20 using manipulatives.	Teacher's Edition: 79, 89
PO 3. State addition facts for sums through 18 and subtraction for differences with minuends through 9 or less.	Teacher's Edition: 15, 18, 23-24, 29, 32, 33, 35, 38, 42, 43, 45, 47, 49, 52, 56, 58, 60, 63, 67, 78, 79, 81, 85, 86, 117
PO 4. Add one- and two-digit whole numbers without regrouping.	Teacher's Edition: 18, 27, 29, 33, 35, 43, 45, 47, 49, 52, 56, 58, 60, 63, 67, 70, 74, 78, 81, 83, 85, 88, 110, 117
PO 5. Subtract one- and two-digit whole numbers without regrouping.	Teacher's Edition: 18, 26, 29, 45, 56, 60, 67, 74, 79, 81, 85, 88, 103, 110
PO 6. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 33, 56, 60, 63, 70, 81, 85, 88, 103, 110
PO 7. Solve word problems using addition and subtraction of two-digit numbers without regrouping.	Teacher's Edition: 33, 56, 60, 63, 70, 81, 85, 88, 103
PO 8. Count by multiples to show the process of multiplication (10's, 5's, 2's).	Teacher's Edition: 38, 45, 47, 49, 52, 56, 57, 71, 77, 88, 106, 107, 123, 124
PO 9. Demonstrate families of equations for addition and subtraction through 18.	Teacher's Edition: 16, 121
PO 10. Demonstrate the identity and commutative properties of addition through 18.	Teacher's Edition: 35, 43
PO 11. Identify addition and subtraction as inverse operations.	Teacher's Edition: 104, 121
PO 12. Apply the symbols: +, -, =.	Teacher's Edition: 14, 16, 18, 26, 27, 29, 33, 35, 43, 45, 47, 49, 52, 60, 67, 97, 101, 104
PO 13. Use grade-level appropriate mathematical terminology.	Teacher's Edition: 21, 26, 29, 33, 40, 56, 74
PO 16. Add and subtract money without regrouping using manipulatives and paper and pencil through 99¢.	Teacher's Edition: 26, 29, 42, 45, 49, 52, 56, 58, 60, 67, 70, 74, 78, 81, 85, 86, 88, 92, 93, 95, 97, 98, 99, 106, 110, 111, 117, 120, 123

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 1 Performance Objectives	Summer Success[®]: Math Grade 1
PO 1. Solve problems using a variety of mental computations and reasonable estimation.	Teacher's Edition: 18, 26, 29, 33, 49, 52, 78, 100, 106, 114, 116, 121
PO 2. Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.	Teacher's Edition: 18, 26, 29, 33, 49, 52, 78, 106, 114, 121

S t r a n d 2 : D a t a A n a l y s i s , P r o b a b i l i t y , a n d D i s c r e t e M a t h e m a t i c s

C o n c e p t 1 : D a t a A n a l y s i s

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 1 Performance Objectives	Summer Success[®]: Math Grade 1
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 14, 18, 33, 42, 45, 49, 74, 78, 85, 92, 96, 110, 114, 117
PO 2. Make a simple pictograph or tally chart with appropriate labels from organized data.	Teacher's Edition: 14, 18, 33, 38, 42, 49, 53, 63, 74, 78, 81, 85, 92, 96, 117
PO 3. Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest.	Teacher's Edition: 26, 29, 49, 52, 67, 70, 99, 103, 123
PO 4. Answer questions about pictographs using terms such as most, least, equal, more than, less than, and greatest.	Teacher's Edition: 26, 29, 49, 52, 67, 70, 99, 103, 123
PO 5. Formulate questions based on charts, graphs, and tables.	Teacher's Edition: 26, 29, 49, 52, 99, 103, 117
PO 6. Solve problems using graphs, charts, and tables.	Teacher's Edition: 26, 29, 33, 38, 42, 49, 52, 60, 63, 67, 70, 74, 78, 81, 85, 88, 92, 99, 103, 106, 110, 114, 117, 123

Concept 3: Discrete Mathematics - Systematic Listing and Counting

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Make arrangements that represent the number of combinations that can be formed by pairing items taken from two sets, using manipulatives (e.g., How many ice cream cones can one make with two different kinds of ice cream and two different types of cones?).	Teacher's Edition: 110, 114, 120

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Communicate a grade-level appropriate pattern (e.g., ♦, □, ♥ Repeat this complete pattern).	Teacher's Edition: 14, 16, 17, 18, 26, 29, 33, 34, 38, 41, 42, 44, 45, 49, 52, 60, 67, 70, 74, 76, 78, 81, 85, 88, 96, 99, 106, 110, 114, 115, 117, 120
PO 2. Extend a simple grade-level appropriate pattern (e.g., ↑, ↓, ↑, ↓, ↑, __, __, __).	Teacher's Edition: 14, 16, 17, 18, 26, 29, 33, 34, 38, 41, 42, 44, 45, 49, 52, 60, 67, 70, 74, 76, 78, 81, 85, 88, 96, 99, 106, 110, 114, 115, 117, 120
PO 3. Create grade-level appropriate patterns.	Teacher's Edition: 14, 16, 17, 18, 26, 29, 33, 34, 38, 41, 42, 44, 45, 49, 52, 60, 67, 70, 74, 76, 78, 81, 85, 88, 96, 99, 106, 110, 114, 115, 117, 120

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Use variables in context situations.	Teacher's Edition: 38, 49, 50, 78
PO 2. Find the missing sum or difference in number sentences for sums and minuends through 9 (e.g., $2 + 5 = \underline{\quad}$).	Teacher's Edition: 26, 27, 43, 47, 58

Concept 4: Analysis of Change

Analyze change in a variable over time and in various concepts.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Identify the change in a variable over time (e.g., an object gets taller, colder, heavier, etc.).	Teacher's Edition: 88
PO 2. Make simple predictions based on a variable (e.g., select next stage of plant growth).	Teacher's Edition: 88

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Use the words vertex and side when describing simple two-dimensional geometric shapes.	Teacher's Edition: 26, 29, 33, 38, 42, 43, 45, 56, 60, 68, 78, 81, 99, 106, 114
PO 2. Identify 2-dimensional shapes by attributes (size, shape, number of sides, vertices).	Teacher's Edition: 18, 26, 29, 33, 38, 42, 43, 45, 56, 60, 68, 78, 81, 99, 106, 114
PO 3. Use concepts and terms of position and size in contextual situations: <ul style="list-style-type: none">• Inside/outside• Left/right• Above/below/beside• Smaller/larger• Longer/shorter	Teacher's Edition: 29, 40, 43, 92, 96, 99, 114, 117, 120, 123
PO 4. Name two common 2-dimensional shapes (square, rectangle, triangle, circle).	Teacher's Edition: 18, 26, 38, 40, 48, 49, 51, 56, 68, 74
PO 5. Draw 2-dimensional shapes (square, rectangle, triangle, circle).	Teacher's Edition: 18, 26, 27, 38, 40, 42, 48, 49, 51, 56, 81
PO 6. Recognize where a line of symmetry divides a 2-dimensional shape into mirror images.	Teacher's Edition: 38, 67, 92, 94, 103

C o n c e p t 2 : T r a n s f o r m a t i o n o f S h a p e s

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Recognize same shape in different positions (slide/translations).	Teacher's Edition: 18, 27, 43

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Compare the measurable characteristics of two objects (e.g., length, weight, size).	Teacher's Edition: 14, 29, 33, 49, 52, 60, 78, 92, 106, 114, 117
PO 2. Select the appropriate measure of accuracy: <ul style="list-style-type: none"> • Length-inches, feet • Capacity/volume-cups, gallons • Mass/weight-pounds 	Teacher's Edition: 52, 74, 85, 106, 114
PO 3. Tell time to the hour using digital and analog clocks.	Teacher's Edition: 14, 18, 26, 29, 33, 38, 42, 45, 49, 52, 53, 56, 60, 65, 96, 115
PO 4. Name the days of the week for yesterday, today, and tomorrow (e.g., If today is Wednesday, what day will tomorrow be?).	Teacher's Edition: 61
PO 5. Name the 12 months of the years in the proper order, starting with January.	Teacher's Edition: 45, 63
PO 6. Name the 7 days of the week in proper order, starting with Sunday.	Teacher's Edition: 42, 61, 70, 74
PO 7. Measure a given object using the appropriate unit of measure: <ul style="list-style-type: none"> • Length-inches, feet • Capacity/volume-cups, gallons • Mass/weight-pounds 	Teacher's Edition: 29, 33, 56, 60, 74, 85, 106, 114

Strand 5: Structure and Logic

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems in contextual situations.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. Create problems based on contextual situations (addition facts up to 18 and subtraction from 9).	Teacher's Edition: 29, 38, 56, 123

Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 1 Performance Objectives	Summer Success [®] : Math Grade 1
PO 1. List the quantitative components found in word problems.	Teacher's Edition: 29, 38, 49, 50, 70, 74, 78, 85, 88, 92, 110
PO 2. Provide rationale for classifying objects according to observable attributes (color, size, shape, weight, etc.).	Teacher's Edition: 38, 42, 45, 49, 51, 67, 85, 93, 99, 103

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Arizona Academic Content Standards: Mathematics
Grade 2

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Make a model to represent a given whole number 0 through 999.	Teacher's Edition: 17, 26, 27, 31, 34, 35, 40, 43, 47, 50, 53, 58, 61, 65, 68, 71, 75, 76, 79, 83, 86, 89, 94, 97, 101, 104, 107, 110, 112, 115, 118, 124
PO 2. Identify a whole number represented by a model with a word name and symbol 0 through 999.	Teacher's Edition: 14, 28, 35, 53, 58, 92, 117, 121
PO 3. Count aloud, forward or backward, in consecutive order (0 through 999).	Teacher's Edition: 18, 26, 42, 70, 38
PO 4. Identify whole numbers through 999 in or out of order.	Teacher's Edition: 16, 17, 29, 31, 33, 38, 40, 43, 45, 47, 49, 52, 63, 67, 70, 71, 103, 106, 114, 123
PO 5. Write whole numbers through 999 in or out of order.	Teacher's Edition: 16, 17, 29, 31, 33, 38, 40, 43, 45, 47, 49, 52, 63, 67, 70, 71, 103, 106, 114, 123
PO 6. State equivalent forms of whole numbers using multiples of 10 through 1,000 ($430 + 200 = 600 + 30$).	Teacher's Edition: 17, 51, 53, 74, 75, 76, 78, 81, 83, 85, 86, 92, 96, 106, 111
PO 7. State verbally whole numbers, through 999, using correct place value (e.g., A student will read 528 as five hundreds, two tens, and eight ones.).	Teacher's Edition: 18, 29, 33, 35, 42, 49, 70, 74, 78, 88, 96, 99, 103, 106, 110, 114
PO 8. Construct models to represent place value concepts for the one's, ten's, and hundred's places.	Teacher's Edition: 35, 53, 58, 110, 112, 117, 121

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 9. Apply expanded notation to model place value through 999 (e.g., $378 = 3 \text{ hundreds} + 7 \text{ tens} + 8 \text{ ones}$).	Teacher's Edition: 53, 58
PO 10. Identify odd and even (including 0) whole numbers through 999.	Teacher's Edition: 17, 27, 31, 34, 40, 43, 47, 50, 53, 56, 60, 63, 74, 89, 92, 118
PO 11. Compare two whole numbers through 999.	Teacher's Edition: 39, 45, 65, 79, 82, 85, 86, 89, 94, 97, 99, 101, 104, 107
PO 12. Use ordinal numbers.	Teacher's Edition: 60, 65, 110, 113, 114, 116
PO 13. Order three or more whole numbers through 999 (least to greatest or greatest to least).	Teacher's Edition: 86, 89, 104, 118
PO 14. Make models that represent given fractions (halves and fourths).	Teacher's Edition: 66, 69, 79
PO 15. Identify in symbols and words a model that is divided into equal fractional parts (halves and fourths).	Teacher's Edition: 66, 69, 79
PO 16. Count money through \$ 5.00 using manipulatives and pictures of bills and coins.	Teacher's Edition: 26, 29, 34, 38, 42, 45, 49, 50, 56, 60, 63, 67, 70, 74, 76, 78, 81, 84, 85, 86, 88, 89, 92, 93, 94, 99, 103, 106, 107, 110, 114, 115, 117, 120
PO 17. Identify the value of a collection of money using ¢ and \$ through \$ 5.00.	Teacher's Edition: 74, 76, 78, 81, 83, 84, 86, 88, 103, 107, 114
PO 18. Use decimals through hundredths in contextual situations with money.	Teacher's Edition: 74, 78, 81, 84, 88, 103, 114
PO 20. Distinguish the equivalency among decimals, fractions, and percents (e.g., half-dollar = $50¢ = 50\%$).	Teacher's Edition: 110

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 1. Demonstrate the process of addition through two three-digit whole numbers, using manipulatives.	Teacher's Edition: 21, 25, 28, 42, 48, 58, 74, 75, 78, 85, 92, 110, 114

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 2. Demonstrate the process of subtraction using manipulatives with two-digit whole numbers.	Teacher's Edition: 48, 50, 103, 120
PO 3. State addition and subtraction facts.	Teacher's Edition: 21, 22, 25, 26, 27, 28, 30, 31, 34, 40, 43, 46, 47, 48, 50, 51, 53, 58, 59, 60, 61, 62, 64, 65, 68, 71, 76, 79, 81, 83
PO 4. Add one- and two-digit whole numbers with regrouping.	Teacher's Edition: 65, 68, 71, 75, 83, 85, 86, 89, 97, 101, 104, 107, 111, 112, 115, 118, 121
PO 5. Subtract one- and two-digit whole numbers with regrouping.	Teacher's Edition: 65, 71, 89, 101, 104, 112, 115, 118
PO 6. Add 3 one- or two-digit addends.	Teacher's Edition: 28, 46, 61, 97, 101, 104, 107, 124
PO 7. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 14, 17, 18, 26, 29, 33, 38, 45, 49, 52, 63, 70, 74, 78, 85, 88, 92, 96, 103, 106, 110, 114, 123
PO 8. Solve word problems using addition and subtraction of two two-digit numbers, with regrouping and two three-digit numbers without regrouping.	Teacher's Edition: 78, 115
PO 9. Count by multiples of three.	Teacher's Edition: 103
PO 10. State multiplication facts: 2's, 5's, and 10's.	Teacher's Edition: 33, 52, 70, 97, 101, 104, 107, 121, 124
PO 11. Demonstrate the associative property of addition [e.g., $(3 + 5) + 4 = 3 + (5 + 4)$].	Teacher's Edition: 28, 71, 74, 78, 79, 81, 83, 85, 86, 101, 107, 118, 121, 124
PO 12. Apply grade-level appropriate properties to assist in computation.	Teacher's Edition: 28, 71, 74, 78, 79, 81, 83, 85, 86, 101, 107, 118, 121, 124
PO 13. Apply the symbols: +, -, ×, ÷, =, ≠, <, >, %.	Teacher's Edition: 14, 17, 18, 22, 26, 27, 28, 29, 30, 31, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 52, 53, 56, 58, 60, 61, 63, 64, 65, 67, 68, 70, 71, 74, 76, 77, 78, 81, 83, 85, 86, 94, 97, 101, 104, 107, 112, 115, 118, 121, 124
PO 14. Use grade-level appropriate mathematical terminology.	Teacher's Edition: 39, 45, 52, 56, 63, 67, 70, 74, 78, 81, 82, 85, 86, 88, 92, 96, 99, 101, 103, 104, 106, 107, 110, 114, 115, 117, 120, 123, 124

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 15. Demonstrate addition of fractions with like denominators (halves and fourths) using models.	Teacher's Edition: 66, 69
PO 17. Add and subtract money without regrouping using manipulatives and paper and pencil, through \$ 5.00.	Teacher's Edition: 26, 34, 38, 42, 45, 49, 50, 56, 60, 63, 67, 70, 74, 76, 78, 81, 84, 85, 86, 88, 89, 92, 93, 94, 99, 103, 106, 107, 110, 114, 115, 117, 120

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 1. Solve problems using a variety of mental computations and reasonable estimation.	Teacher's Edition: 30, 57, 64, 78, 100, 102, 103, 105, 110
PO 2. Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.	Teacher's Edition: 18, 26, 38, 41, 44, 45, 50, 88
PO 3. Compare an estimate to the actual measure.	Teacher's Edition: 44
PO 4. Evaluate the reasonableness of an estimate.	Teacher's Edition: 88

S t r a n d 2 : D a t a A n a l y s i s , P r o b a b i l i t y , a n d D i s c r e t e M a t h e m a t i c s

C o n c e p t 1 : D a t a A n a l y s i s

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 2. Make a simple pictograph or tally chart with appropriate labels from organized data.	Teacher's Edition: 18, 110, 114, 117, 120, 123
PO 3. Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest.	Teacher's Edition: 117, 120, 123
PO 4. Answer questions about a pictograph using terms such as most, least, equal, more than, less than, and greatest.	Teacher's Edition: 117, 120, 123

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 5. Formulate questions based on graphs, charts, and tables.	Teacher's Edition: 106
PO 6. Solve problems using graphs, charts, and tables.	Teacher's Edition: 29, 33, 40, 49, 52, 70, 88, 106, 117, 120, 123

C o n c e p t 3 : D i s c r e t e M a t h e m a t i c s - S y s t e m a t i c L i s t i n g a n d C o u n t i n g

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 1. Make arrangements that represent the number of combinations that can be formed by pairing items taken from two sets, using manipulatives (e.g., How many types of sandwiches can be made with 3 different types of fillings, and two types of bread, if only one type of bread and one filling is used for each sandwich?).	Teacher's Edition: 56, 67, 85, 89, 92, 106, 114, 117, 120

S t r a n d 3 : P a t t e r n s , A l g e b r a , a n d F u n c t i o n s

C o n c e p t 1 : P a t t e r n s

Identify patterns and apply pattern recognition to reason mathematically.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 1. Communicate a grade-level appropriate pattern, using symbols or numbers (e.g., ▼, ●, ▲, ▼, ●, ▲, ▼, __, __, __).	Teacher's Edition: 18, 22, 26, 29, 33, 38, 42, 45, 47, 49, 52, 63, 67, 70, 80, 85, 96, 99, 106, 110, 114, 123
PO 2. Extend a grade-level appropriate repetitive pattern (e.g., 12, 22, 32, __, __, __).	Teacher's Edition: 85, 110, 112, 114
PO 3. Create grade-level appropriate patterns.	Teacher's Edition: 22, 29, 31, 33, 40, 43, 47, 80, 85, 110, 114

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Use variables in contextual situations.	Teacher's Edition: 29, 38, 42, 45, 49, 56, 63, 67, 97
PO 2. Find the missing element (addend, subtrahend, minuend, sum, difference) in addition and subtraction number sentences for sums through 18 and minuends through 9 (e.g., $13 - \underline{\quad} = 8$).	Teacher's Edition: 29, 38, 42, 45, 49, 56, 63, 67, 97

Concept 4: Analysis of Change

Analyze change in a variable over time and in various concepts.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).	Teacher's Edition: 83, 103
PO 2. Make simple predictions based on a variable (e.g., a child's height from year).	Teacher's Edition: 14, 83, 103

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Compare attributes of 2-dimensional shapes (square, rectangle, triangle, and circle).	Teacher's Edition: 18, 26, 27, 33, 38, 40, 45, 52, 106
PO 2. Recognize congruent shapes.	Teacher's Edition: 29, 31, 42, 67, 85
PO 3. Recognize line(s) of symmetry for a 2-dimensional shape.	Teacher's Edition: 26, 42, 45, 49, 60, 63, 81, 99, 103, 117

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 2 Performance Objectives	Summer Success[®]: Math Grade 2
PO 2. Select the appropriate U.S. Customary measure of accuracy: <ul style="list-style-type: none"> • Length-inches, feet, yards, miles • Capacity/volume-pints, quarts • Mass/weight-ounces 	Teacher's Edition: 41, 44, 78
PO 3. Tell time to the quarter hour using analog and digital clocks.	Teacher's Edition: 27, 33, 60, 66
PO 4. Determine the passage of time using units of days and weeks within a month using a calendar.	Teacher's Edition: 68, 106, 113, 116, 123
PO 5. Select the appropriate tool to measure the given characteristic of an object.	Teacher's Edition: 14, 41, 78
PO 6. Measure a given object using the appropriate unit of measure: <ul style="list-style-type: none"> • Length-inches, miles • Capacity/volume-pints, quarts • Mass/weight-ounces 	Teacher's Edition: 41, 44, 56, 78
PO 7. State equivalent relationships: <ul style="list-style-type: none"> • 12 inches = 1 foot • 60 minutes = 1 hour • 24 hours = 1 day • 7 days = 1 week • 12 months = 1 year • 100 pennies = 1 dollar • 10 dimes = 1 dollar • 4 quarters = 1 dollar 	Teacher's Edition: 29, 33, 38, 41, 49, 52, 56, 67, 70, 74, 81, 85, 88, 92, 96, 99, 103, 110, 120, 123

Strand 5: Structure and Logic

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems in contextual situations.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Create contextual problems that require addition or subtraction with one- or two-digit numbers.	Teacher's Edition: 43, 47, 53, 68, 71, 74, 78, 85, 89, 92, 96, 101, 103, 104, 107, 110, 114, 115, 120, 124

Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 2 Performance Objectives	Summer Success [®] : Math Grade 2
PO 1. Identify the concepts <i>some</i> , <i>every</i> , and <i>many</i> within the context of logical reasoning.	Teacher's Edition: 18, 26, 56, 67, 77, 85, 88, 92, 95



Summer Success[®]: Math © 2000
correlated to
Arizona Academic Content Standards: Mathematics
Grade 3

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Read whole numbers in contextual situations (through six-digit numbers).	Teacher's Edition: 14, 34, 56, 58, 59, 62, 70, 79, 96, 104
PO 2. Identify six-digit whole numbers in or out of order.	Teacher's Edition: 14, 58, 59, 62
PO 3. Write whole numbers through six digits in or out of order.	Teacher's Edition: 14, 27, 34, 56, 58, 59, 62, 79, 96, 104, 110, 114, 117, 121
PO 4. State whole numbers, through six digits, with correct place value, by using models, illustrations, symbols, or expanded notation (e.g., $53,941 = 50,000 + 3,000 + 900 + 40 + 1$).	Teacher's Edition: 26, 34, 40, 45, 47, 52, 56, 63, 67, 68, 78, 79, 81, 85, 86, 96, 99, 101, 110, 112, 117, 123
PO 5. Construct models to represent place value concepts for the one's, ten's, and hundred's places.	Teacher's Edition: 24, 29, 30, 39, 41, 42, 44, 45, 47, 48, 51, 52, 59, 62, 63, 64, 81, 112
PO 6. Apply expanded notation to model place value through 9,999 (e.g., $5,378 = 5,000 + 300 + 70 + 8$).	Teacher's Edition: 26, 34, 40, 45, 47, 52, 56, 63, 68, 78, 79, 81, 85, 86, 96, 99, 101, 110, 112, 117, 123
PO 7. Sort whole numbers into sets containing only odd numbers or only even numbers.	Teacher's Edition: 14, 17, 18, 21, 26, 27, 29, 31, 33, 34, 40, 46, 49, 50, 53, 63, 65, 78, 79, 83, 85, 92, 94, 97, 120
PO 8. Compare two whole numbers, through six-digits.	Teacher's Edition: 21, 39, 45, 46, 58, 71, 75, 81, 111

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 9. Order three or more whole numbers through six-digits numbers (least to greatest or greatest to least).	Teacher's Edition: 21, 22, 58, 76
PO 10. Make models that represent proper fractions (halves, thirds, fourths, eighths, and tenths).	Teacher's Edition: 26, 27, 38, 40, 60, 65, 74, 95, 98, 116, 125
PO 11. Identify symbols, words, or models that represent proper fractions (halves, thirds, fourths, eighths, and tenths).	Teacher's Edition: 26, 60, 65, 74, 95, 98, 121
PO 12. Use proper fractions in contextual situations.	Teacher's Edition: 21, 26, 38, 52, 60, 63, 67, 74, 81, 95, 98, 103, 106, 113, 116, 117
PO 13. Compare two proper fractions with like denominators.	Teacher's Edition: 60, 61, 92, 93, 95, 98, 113, 116, 117, 118
PO 14. Order three or more proper fractions with like denominators (halves, thirds, fourths, eighths, and tenths).	Teacher's Edition: 93, 94, 95, 98, 107
PO 15. Count amounts of money through \$ 20.00 using pictures or actual bills and coins.	Teacher's Edition: 14, 33, 38, 42, 45, 56, 57, 60, 70, 78, 81, 92, 99, 100, 103, 110, 114, 118, 120
PO 16. Use decimals through hundredths in contextual situations.	Teacher's Edition: 26, 29, 45, 50, 61, 70, 121
PO 17. Compare two decimals, through hundredths, using models, illustrations, or symbols.	Teacher's Edition: 74, 94
PO 18. Order three of more decimals, through hundredths, using models, illustrations, or symbols.	Teacher's Edition: 94
PO 19. Determine the equivalency among decimals, fractions, and percents (e.g., half-dollar = 50 ¢ = 50% and $1/4 = 0.25 = 25%$).	Teacher's Edition: 18, 29, 33, 42, 70, 92, 106, 114
PO 20. Identify whole number factors and/or pairs of factors for a given whole number through 24.	Teacher's Edition: 26, 28, 31, 38, 43, 45, 47, 63, 67, 69, 74, 78, 81, 85, 88, 103, 106, 123
PO 21. Determine multiples of a given whole number with products through 24.	Teacher's Edition: 26, 28, 31, 38, 43, 45, 47, 63, 67, 69, 74, 81, 88, 103, 106, 123

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Demonstrate the process of subtraction using manipulatives through three-digit whole numbers.	Teacher's Edition: 52, 56
PO 2. Add two three-digit whole numbers.	Teacher's Edition: 47, 79, 94, 96, 101, 107, 126
PO 3. Subtract three-digit whole numbers.	Teacher's Edition: 47, 61, 63, 64, 68, 94, 96, 101
PO 4. Add a column of numbers.	Teacher's Edition: 26, 58, 104
PO 5. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 26, 29, 30, 38, 39, 42, 45, 49, 52, 56, 57, 60, 63, 64, 70, 78, 81, 99, 106, 107, 110, 120, 123
PO 6. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 26, 29, 30, 38, 39, 42, 45, 49, 52, 56, 57, 60, 63, 64, 70, 78, 81, 99, 106, 107, 110, 120, 123
PO 7. Demonstrate the process of multiplication as repeatedly adding the same number, counting by multiples, combining equal sets, and making arrays.	Teacher's Edition: 18, 21, 24, 26, 29, 33, 38, 40, 42, 43, 45, 47, 49, 50, 56, 60, 66, 67, 69, 86, 88, 123
PO 8. Demonstrate the process of division with one-digit divisors (separating elements of a set into smaller equal sets, sharing equally, or repeatedly subtracting the same number).	Teacher's Edition: 27, 40, 42, 45, 47, 49, 50, 52, 53, 56, 60, 63, 67, 69, 71, 74, 78, 81, 85, 86, 88, 92, 94, 96, 99, 103, 106, 107, 117, 120, 121, 123
PO 9. Demonstrate families of equations for multiplication and division through 9s.	Teacher's Edition: 14, 21, 24, 26, 27, 29, 31, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 66, 69, 74, 94, 111, 115
PO 10. State multiplication and division facts through 9s.	Teacher's Edition: 14, 21, 24, 26, 27, 29, 31, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 66, 69, 74, 75, 81, 111, 115, 119, 122
PO 11. Demonstrate the commutative and identity properties of multiplication.	Teacher's Edition: 14, 18, 21, 26, 29, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 56, 60, 74, 81, 85, 99, 114, 117, 123
PO 12. Identify multiplication and division as inverse operations.	Teacher's Edition: 52, 99, 106, 111

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 13. Apply grade-level appropriate properties to assist in computation.	Teacher's Edition: 14, 22, 26, 29, 30, 38, 39, 42, 45, 49, 52, 56, 58, 60, 63, 64, 70, 78, 81, 92, 99, 104, 106, 110, 120
PO 14. Apply the symbols: \times , \div , $/$, $*$, $\%$, and the grouping symbols () and “,”.	Teacher's Edition: 14, 42, 45, 49, 56, 63, 67, 78, 88, 106, 110
PO 15. Use grade-level appropriate mathematical terminology.	Teacher's Edition: 22, 38, 40, 58, 65, 67, 92, 97, 99, 104, 112
PO 16. Add or subtract fractions with like denominators (halves, thirds, fourths, eighths, and tenths) appropriate to grade level.	Teacher's Edition: 61, 83, 93, 99, 124
PO 17. Apply addition and subtraction in contextual situations, through \$ 20.00.	Teacher's Edition: 14, 26, 38, 42, 45, 49, 50, 56, 60, 61, 63, 67, 74, 81, 88, 96, 97, 100, 117, 120

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 18, 26, 29, 42, 45, 63, 89, 123, 126
PO 2. Estimate length and weight using U.S. customary units.	Teacher's Edition: 18, 26, 29, 42, 45, 52, 63, 85, 86, 123
PO 3. Record estimated and actual linear measurements for real-life objects (e.g., length of fingernail, height of desk).	Teacher's Edition: 18, 26, 29, 45, 52, 63, 123
PO 4. Compare estimations of appropriate measures to actual measures.	Teacher's Edition: 18, 26, 29, 45, 52, 63, 123
PO 5. Evaluate the reasonableness of estimated measures.	Teacher's Edition: 26, 45, 52, 63, 123

Strand 2: Data Analysis, Probability, and Discrete Mathematics

Concept 1: Data Analysis

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 14, 18, 26, 29, 56, 81, 114
PO 2. Construct a horizontal bar, vertical bar, pictograph or tally chart with appropriate labels and title from organized data.	Teacher's Edition: 18, 26, 29, 33, 38, 42, 45, 60, 63, 70, 81, 85, 88, 92, 96, 103, 114, 117, 126
PO 3. Interpret data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).	Teacher's Edition: 26, 29, 33, 42, 49, 67, 88, 96, 99, 106, 126
PO 4. Answer questions based on data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).	Teacher's Edition: 29, 33, 42, 49, 67, 88, 99, 106, 120, 123, 126
PO 5. Formulate questions based on graphs, charts, and table to solve problems.	Teacher's Edition: 29, 33, 67, 88, 99, 120, 123, 126
PO 6. Solve problems using graphs, charts, and tables.	Teacher's Edition: 26, 29, 33, 42, 67, 88, 99, 106, 120, 126

Concept 2: Probability

Understanding and apply the basic concepts of probability.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 2. Make predictions about the probability of events being more likely, less likely, equally likely or unlikely.	Teacher's Edition: 100
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 100

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Communicate a grade level appropriate iterative pattern using symbols or numbers.	Teacher's Edition: 14, 17, 33, 43, 45, 49, 50, 56, 65, 70, 74, 81, 106, 114, 124
PO 2. Extend a grade-level appropriate repetitive pattern (e.g., 5, 10, 15, 20,... rule: add five or count by fives).	Teacher's Edition: 14, 17, 18, 31, 33, 38, 43, 45, 49, 56, 65, 70, 71, 106, 114, 118, 124
PO 3. Solve grade-level appropriate pattern problems.	Teacher's Edition: 14, 17, 31, 33, 38, 43, 45, 49, 56, 65, 70, 76, 78, 81, 85, 88, 92, 96, 106, 114, 117, 118, 123, 124, 125

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Use variables in contextual situations.	Teacher's Edition: 42, 63, 67, 88, 110, 112
PO 2. Solve equations with one variable using missing addends to sums of 18 (e.g., $\square + 9 = 18$, $9 + \square = 18$); and using minuend through 18 (e.g., $18 - \square = 9$, $18 - 9 = \square$).	Teacher's Edition: 42, 63, 68, 88, 101, 103, 110, 112, 114, 117, 125

Concept 4: Analysis of Change

Analyze change in a variable over time and in various concepts.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).	Teacher's Edition: 103

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Build geometric figures with other common shapes (e.g., tangrams, pattern blocks, geoboards).	Teacher's Edition: 18, 27, 28, 31, 33, 34, 38, 42, 45, 49, 50, 52, 56, 88, 105
PO 2. Name concrete objects and pictures of 3-dimensional solids (cones, spheres, and cubes).	Teacher's Edition: 18, 92, 96, 99, 103, 105, 106, 110, 114, 115, 117, 123, 125
PO 3. Describe relationships between 2-dimensional and 3-dimensional objects (squares/cubes, circles/spheres, triangles/cones).	Teacher's Edition: 92, 96, 99, 103, 106, 110, 114, 123
PO 4. Recognize similar shapes.	Teacher's Edition: 52, 56
PO 5. Identify a line of symmetry in a 2-dimensional shape.	Teacher's Edition: 60, 81, 102, 105

Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Recognize same shape in different positions (turn/rotation).	Teacher's Edition: 28

Concept 3: Coordinate Geometry

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Identify points in the first quadrant of a grid using ordered pairs.	Teacher's Edition: 14

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 3 Performance Objectives	Summer Success [®] : Math Grade 3
PO 1. Select the appropriate measure of accuracy: <ul style="list-style-type: none"> • length-centimeters, meters, kilometers • capacity/volume-liters • mass/weight-grams 	Teacher's Edition: 14, 18, 26, 29, 52, 77, 84, 117, 120, 123, 126
PO 2. Tell time with one minute precision (analog).	Teacher's Edition: 14, 18, 25, 26, 28, 29, 33, 38, 42, 49, 52, 56, 60, 61, 63, 67, 78, 81, 85, 88, 89, 92, 96, 99, 103, 106, 110, 114, 117, 123, 125, 126
PO 3. Determine the passage of time across months (units of days, weeks, months) using a calendar.	Teacher's Edition: 106, 117
PO 4. Measure a given object using the appropriate unit of measure: <ul style="list-style-type: none"> • length-centimeters, millimeters, meters, kilometers • capacity/volume-liters • mass/weight-grams 	Teacher's Edition: 18, 26, 29, 38, 42, 45, 52, 56, 67, 77, 80, 84, 87, 89
PO 5. Record temperatures to the nearest degree in degrees Fahrenheit and degrees Celsius as shown on a thermometer.	Teacher's Edition: 74, 78
PO 6. Compare units of measure to determine more or less relationships for: <ul style="list-style-type: none"> • length-inches to feet, centimeters to meters • time-minutes to hours, hours to days, days to weeks, months to years • money-pennies, nickels, dimes, quarters, and dollars 	Teacher's Edition: 33, 50, 52, 56, 57, 60, 63, 67, 70, 74, 77, 78, 80, 81, 84, 85, 87, 88, 92, 93, 96, 100, 123
PO 7. Determine relationships for: <ul style="list-style-type: none"> • volume-cups and gallons • weight-ounces and pounds • money-extend to amounts greater than one dollar 	Teacher's Edition: 14, 18, 29, 33, 77, 81, 92, 93, 96, 99, 103, 106, 110, 114, 115
PO 8. Compare the length of two objects using U.S. customary or metric units.	Teacher's Edition: 52, 67, 78, 85
PO 9. Determine the perimeter using a rectangular array.	Teacher's Edition: 29, 67, 85, 125

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 10. Represent area using a rectangular array.	Teacher's Edition: 29

**S t r a n d 5 :
S t r u c t u r e a n d L o g i c**

**C o n c e p t 1 : A l g o r i t h m s a n d A l g o r i t h m i c
T h i n k i n g**

Use reasoning to solve mathematical problems in contextual situations.

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 1. Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.	Teacher's Edition: 56, 126

**C o n c e p t 2 : L o g i c , R e a s o n i n g , A r g u m e n t s , a n d
M a t h e m a t i c a l P r o o f**

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 3 Performance Objectives	Summer Success[®]: Math Grade 3
PO 1. Draw conclusions based on existing information (e.g., All students in Ms. Dean's 1 st grade class are less than 7 years old. Rafael is in Ms. Dean's class. Conclusion: Rafael is less than 7 years old.)	Teacher's Edition: 49, 67, 68, 78, 99, 126



Summer Success[®]: Math © 2000
correlated to
Arizona Academic Content Standards: Mathematics
Grade 4

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 4 Performance Objectives	Summer Success [®] : Math Grade 4
PO 1. Read whole numbers in contextual situations.	Teacher's Edition: 18, 27, 29, 63, 74, 94, 98, 121
PO 2. Identify whole numbers in or out of order.	Teacher's Edition: 18, 27, 29, 74, 98, 121
PO 3. Write whole numbers in or out of order.	Teacher's Edition: 14, 17, 27, 29, 38, 53, 63, 74, 94, 98, 121
PO 4. State place values for whole numbers (e.g., In the number 203,495 what is the value of the 2?).	Teacher's Edition: 22, 25, 26, 28, 30, 31, 33, 45, 47, 52, 53, 63, 64, 65, 67, 71, 79, 85, 88, 120, 123
PO 5. Construct models to represent place value concepts for the one's, ten's, hundred's, and thousand's places.	Teacher's Edition: 25, 28, 30, 33, 42, 56, 58, 63, 64
PO 6. Apply expanded notation to model place value (e.g., $203,495 = 200,000 + 3,000 + 400 + 90 + 5$).	Teacher's Edition: 22, 25, 26, 28, 30, 33, 45, 47, 52, 53, 63, 64, 65, 78, 120
PO 7. Compare two whole numbers	Teacher's Edition: 29, 30, 31, 64, 106, 117
PO 8. Order three or more whole numbers.	Teacher's Edition: 30, 42, 50, 64, 88, 106, 117
PO 9. Make models that represent mixed numbers.	Teacher's Edition: 106
PO 10. Identify symbols, words, or models that represent mixed numbers.	Teacher's Edition: 18, 60, 78, 92, 99, 106

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 11. Use mixed numbers in contextual situations.	Teacher's Edition: 60, 78, 99, 106
PO 12. Compare two unit fractions (e.g., $\frac{1}{2}$ to $\frac{1}{5}$) or proper or mixed numbers with like denominators.	Teacher's Edition: 48, 51, 60, 85, 103
PO 13. Order three or more unit fractions or proper or improper fractions with like denominators.	Teacher's Edition: 48, 51
PO 14. Use decimals in contextual situations.	Teacher's Edition: 33, 42, 49, 51, 52, 56, 60, 63, 67, 68, 70, 83, 106, 110
PO 15. Compare two decimals.	Teacher's Edition: 45, 76, 117
PO 16. Order three of more decimals.	Teacher's Edition: 58, 76, 117
PO 17. Determine the equivalency among decimals, fractions, and percents (e.g., $\frac{49}{100} = 0.49 = 49\%$).	Teacher's Edition: 45, 57, 60, 65, 67, 70, 74, 78, 79, 81, 85, 88, 92, 96, 100, 107, 110, 124
PO 18. Identify all whole number factors and pairs of factors for a given whole number through 144.	Teacher's Edition: 26, 29, 31, 33, 38, 39, 40, 45, 47, 56, 70, 74, 78, 81, 82, 85, 99, 115, 117, 118
PO 19. Determine multiples of a given whole number with products through 144.	Teacher's Edition: 18, 22, 26, 29, 31, 38, 40, 42, 45, 47, 67, 78, 81, 82, 85, 99, 117

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Add whole numbers.	Teacher's Edition: 17, 34, 47, 66, 69, 101, 118
PO 2. Subtract whole numbers.	Teacher's Edition: 14, 17, 21, 34, 38, 46, 76, 101, 118
PO 3. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 14, 26, 27, 29, 31, 33, 34, 38, 40, 43, 49, 52, 58, 61, 76, 88, 92, 96, 103, 104, 120, 121
PO 4. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 14, 26, 27, 29, 31, 33, 34, 38, 40, 43, 49, 52, 58, 61, 76, 88, 92, 96, 103, 104, 120, 121

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 5. Multiply multi-digit numbers by two-digit numbers.	Teacher's Edition: 29, 38, 49, 50, 53, 56, 61, 68, 95, 98
PO 6. Divide with one-digit divisors.	Teacher's Edition: 38, 39, 40, 42, 43, 49, 78, 81, 84, 87, 88, 92, 96, 97, 98, 99, 106, 110, 112, 114, 115, 117, 119, 120, 122, 123
PO 7. State multiplication and division facts through 12s.	Teacher's Edition: 14, 18, 22, 26, 27, 29, 33, 38, 39, 40, 42, 45, 49, 56, 59, 60, 62, 66, 67, 69, 70, 77, 78, 80, 82, 85, 88, 92, 95, 96, 98, 99, 103, 106, 108, 110
PO 8. Demonstrate the associate property of multiplication.	Teacher's Edition: 18, 26, 29, 34, 49, 70
PO 9. Apply grade-level appropriate properties to assist in computation.	Teacher's Edition: 14, 17, 18, 26, 29, 33, 34, 42, 43, 45, 49, 52, 59, 62, 77, 80, 85, 88, 117, 120, 121, 124
PO 10. Apply the symbol: \bullet and $()$ for multiplication, and \leq , \geq .	Teacher's Edition: 18, 29
PO 11. Use grade-level appropriate mathematical terminology.	Teacher's Edition: 18, 29, 34, 59, 65, 71, 97, 102, 105, 120, 124
PO 12. Add or subtract fractions with like denominators, no regrouping.	Teacher's Edition: 17, 22, 29, 34, 78, 92, 102, 105, 120, 124
PO 13. Simplify numerical expressions using the order of operations with grade-appropriate operations on number sets.	Teacher's Edition: 14, 18, 26, 29, 34, 40, 42, 43, 85, 88, 120

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 56, 63, 70, 74, 83, 85, 94, 95, 98, 106, 110, 114, 123, 124
PO 2. Use estimation to verify the reasonableness of a calculation (e.g., Is $3284 \times 343 = 1200$ reasonable?).	Teacher's Edition: 56, 63, 70, 74, 83, 85, 94, 98, 99, 110, 114, 123
PO 3. Estimate length and weight using U.S. customary units.	Teacher's Edition: 14, 35, 52, 61, 74, 83

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 4. Estimate and measure for distance.	Teacher's Edition: 35, 52

Strand 2: Data Analysis, Probability, and Discrete Mathematics

Concept 1: Data Analysis

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 14, 33, 42, 56, 60, 96
PO 2. Construct a single-bar graph, line graph or two-set Venn diagram with appropriate labels and title from organized data.	Teacher's Edition: 14, 18, 26, 29, 45, 49, 56, 63, 67, 78, 81, 96, 99, 103, 114, 117, 118
PO 3. Interpret graphical representations and data displays including single-bar graphs, circle graphs, two-set Venn diagrams, and line graphs that display continuous data.	Teacher's Edition: 18, 26, 33, 45, 52, 65, 70, 74, 85, 86, 88, 92, 110, 118, 123
PO 4. Answer questions based on data found on graphical representations and data displays including single-bar graphs, circle graphs, two-set Venn diagrams, and line graphs that display continuous data.	Teacher's Edition: 18, 26, 33, 45, 52, 65, 70, 74, 85, 86, 88, 92, 110, 118, 123
PO 5. Identify the mode(s) of given data.	Teacher's Edition: 18, 33, 52, 56, 60, 65, 70
PO 6. Formulate predictions from a given set of data.	Teacher's Edition: 18, 26, 33, 42, 56, 60
PO 7. Solve contextual problems using graphs, charts, and tables.	Teacher's Edition: 52, 65, 70, 86, 88, 92, 103

Concept 2: Probability

Understanding and apply the basic concepts of probability.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Name the possible outcomes for a probability experiments.	Teacher's Edition: 68, 71, 75, 83

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 2. Describe the probability of events as being more likely, less likely, equally likely or unlikely.	Teacher's Edition: 68, 71, 75, 83
PO 3. Predict the outcome of a grade-level appropriate probability experiment.	Teacher's Edition: 75
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 75
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	Teacher's Edition: 75
PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners, number cubes).	Teacher's Edition: 75
PO 7. Compare the results of two repetitions of the same grade-level appropriate probability experiment.	Teacher's Edition: 75

C o n c e p t 3 : D i s c r e t e M a t h e m a t i c s - S y s t e m a t i c L i s t i n g a n d C o u n t i n g

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Find all possible combinations when one item is selected from each of two sets containing up to three objects (e.g., how many outfits can be made with 3 pants and 2 tee shirts?).	Teacher's Edition: 31, 40, 50, 61, 67, 71, 76, 85

S t r a n d 3 : P a t t e r n s , A l g e b r a , a n d F u n c t i o n s

C o n c e p t 1 : P a t t e r n s

Identify patterns and apply pattern recognition to reason mathematically.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Communicate a grade level appropriate iterative pattern using symbols or numbers.	Teacher's Edition: 14, 17, 18, 29, 33, 34, 38, 45, 49, 52, 53, 56, 60, 63

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 2. Extend a grade-level appropriate iterative pattern.	Teacher's Edition: 14, 17, 18, 29, 33, 34, 38, 45, 49, 52, 53, 56, 60, 63
PO 3. Create grade-level appropriate iterative patterns.	Teacher's Edition: 14, 17, 18, 33, 34, 38, 45, 49, 52, 56, 60

Concept 2: Functions and Relationships
Describe and model functions and their relationships.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).	Teacher's Edition: 14, 17, 29, 49

Concept 3: Algebraic Representations
Represent and analyze mathematical situations and structures using algebraic representations.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Evaluate expressions involving the four basic operations by substituting given whole numbers for the variable.	Teacher's Edition: 14, 18, 29, 45
PO 2. Use variables in contextual situations.	Teacher's Edition: 14, 18, 29, 33, 38, 74, 114
PO 3. Solve one-step equations with one variable represented by a letter or symbol using multiplication of whole numbers, (e.g., $12 = n \times 4$).	Teacher's Edition: 14, 18, 29, 33, 38, 74, 114

Concept 4: Analysis of Change
Analyze change in a variable over time and in various concepts.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).	Teacher's Edition: 49, 120
PO 2. Make predictions based on a variable (e.g., increase in homework time as you progress through the grades.).	Teacher's Edition: 49

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 4 Performance Objectives	Summer Success [®] : Math Grade 4
PO 1. Identify the properties of 2-dimensional figures using appropriate terminology.	Teacher's Edition: 29, 31, 33, 34, 38, 40, 41, 42, 44, 56, 74, 78, 83, 89, 101, 110
PO 2. Identify models or illustrations of prisms, pyramids, cones, cylinders, and spheres.	Teacher's Edition: 14, 18, 26, 31, 56, 60, 113, 116
PO 3. Draw points, lines, and line segments (open or closed endpoints), rays, or angles.	Teacher's Edition: 78, 110, 114
PO 4. Classify angles (right, acute, obtuse, straight).	Teacher's Edition: 67, 85, 110, 114, 115, 117, 120, 121, 123
PO 5. Classify triangles as right, acute, or obtuse.	Teacher's Edition: 92, 96, 97, 106, 112
PO 6. Identify congruent geometric shapes.	Teacher's Edition: 41, 44, 49, 63, 103
PO 7. Identify similar shapes.	Teacher's Edition: 111
PO 8. Draw a 2-dimensional shape that has line symmetry.	Teacher's Edition: 29, 31, 40, 47, 85

Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 4 Performance Objectives	Summer Success [®] : Math Grade 4
PO 1. Demonstrate translation using geometric figures.	Teacher's Edition: 26, 27, 41, 44, 45, 81, 99, 104
PO 2. Identify a tessellation.	Teacher's Edition: 44

C o n c e p t 3 : C o o r d i n a t e G e o m e t r y

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Grade 4 Performance Objectives	Summer Success [®] : Math Grade 4
PO 1. Name the coordinates of a point plotted in the first quadrant.	Teacher's Edition: 112

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 4 Performance Objectives	Summer Success [®] : Math Grade 4
PO 1. Identify the appropriate measure of accuracy for the area of an object (e.g., sq. feet or sq. miles).	Teacher's Edition: 18, 32, 35
PO 2. Compute elapsed time using a clock (e.g., hours and minutes until or since...) or a calendar (e.g., days, weeks, years, since or until...).	Teacher's Edition: 18, 27, 33, 42, 43, 45, 49, 60, 71, 78, 86, 99, 107
PO 3. Select an appropriate tool to use in a particular measurement situation.	Teacher's Edition: 32, 38, 58, 85, 110
PO 4. Approximate measurements to the appropriate degree of accuracy.	Teacher's Edition: 18, 26, 35, 38, 85, 110
PO 5. Compare units of measure to determine <i>more or less</i> relationships including: <ul style="list-style-type: none"> • length-yards and miles • length-meters and kilometers • weight-pounds and tons • weight-grams and kilograms 	Teacher's Edition: 14, 40, 52, 58, 63, 78, 85
PO 6. State equivalent relationships (e.g., 3 teaspoons = 1 tablespoon, 16 cups = 1 gallon, 2000 pounds = 1 ton).	Teacher's Edition: 14, 18, 26, 29, 31, 33, 38, 45, 60, 74, 88, 92, 93, 120
PO 7. Compare the weight of two objects using both U.S. customary and metric units.	Teacher's Edition: 56, 60, 63, 67, 81, 92, 93
PO 8. Determine the perimeter of simple polygons (e.g., square, rectangle, triangle).	Teacher's Edition: 18, 29, 33, 43, 52, 53, 67, 70, 88, 94, 106, 121

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 9. Determine the area of squares and rectangles.	Teacher's Edition: 18, 61, 76, 94
PO 10. Differentiate between perimeter and area of quadrilaterals.	Teacher's Edition: 18, 53, 94

S t r a n d 5 :
S t r u c t u r e a n d L o g i c

C o n c e p t 1 : A l g o r i t h m s a n d A l g o r i t h m i c
T h i n k i n g

Use reasoning to solve mathematical problems in contextual situations.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 1. Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.	Teacher's Edition: 14, 34, 104
PO 2. Develop an algorithm to calculate the perimeter of simple polygons.	Teacher's Edition: 38, 43

C o n c e p t 2 : L o g i c , R e a s o n i n g , A r g u m e n t s , a n d
M a t h e m a t i c a l P r o o f

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 4 Performance Objectives	Summer Success[®]: Math Grade 4
PO 2. Identify simple valid arguments using <i>if...then</i> statements based on graphic organizers (e.g., 2-set Venn diagrams and pictures).	Teacher's Edition: 86

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 correlated to

Arizona Academic Content Standards: Mathematics

Grade 5

Strand 1:

Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 5 Performance Objectives	Summer Success [®] : Math Grade 5
PO 1. Make models that represent improper fractions.	Teacher's Edition: 114
PO 2. Identify symbols, words, or models that represent improper fractions.	Teacher's Edition: 92, 94, 96, 99, 103, 123
PO 3. Use improper fractions in contextual situations.	Teacher's Edition: 92, 94, 103, 106, 110, 123
PO 4. Compare two proper fractions or improper fractions with like denominators.	Teacher's Edition: 96, 115, 123
PO 5. Order three or more unit fractions, proper or improper fractions with like denominators, or mixed numbers with like denominators.	Teacher's Edition: 92, 94, 96, 103, 104, 106, 107, 112, 114
PO 6. Compare two whole numbers, fractions, and decimals (e.g., $\frac{1}{2}$ to 0.6).	Teacher's Edition: 21, 46, 60, 63, 70, 74, 78, 79, 81, 103, 114
PO 7. Order whole numbers, fractions, and decimals.	Teacher's Edition: 17, 22, 27, 34, 50, 58, 61, 63, 65, 83, 93, 112
PO 8. Determine the equivalency between and among fractions, decimals, and percents in contextual situations.	Teacher's Edition: 14, 26, 56, 60, 63, 67, 70, 74, 77, 78, 79, 81, 84, 85, 87, 88, 93, 92, 94, 95, 96, 99, 103, 104, 106, 110, 114, 115, 117, 120, 123
PO 9. Identify all whole number factors and pairs of factors for a number.	Teacher's Edition: 14, 29, 38, 39, 40, 41, 45, 49, 75, 76, 83, 97, 107, 111, 124

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 10. Recognize that 1 is neither a prime nor a composite number.	Teacher's Edition: 14, 89, 107
PO 11. Sort whole numbers (through 50) into sets containing only prime numbers or only composite numbers.	Teacher's Edition: 89, 107, 124

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 14, 26, 29, 33, 38, 42, 43, 45, 47, 60, 67, 74, 78, 79, 85, 88, 92, 96, 97, 99, 103, 110, 114, 117, 118, 120, 123
PO 2. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 14, 26, 29, 33, 38, 42, 43, 45, 47, 60, 67, 74, 78, 79, 85, 88, 92, 96, 97, 99, 103, 110, 114, 117, 118, 120, 123
PO 3. Multiply whole numbers.	Teacher's Edition: 18, 22, 25, 26, 28, 29, 33, 38, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 58, 61, 71, 75, 101, 111
PO 4. Divide with whole numbers.	Teacher's Edition: 22, 26, 31, 38, 48, 50, 53, 58, 61, 68, 75, 82, 101, 103, 111
PO 7. Apply grade-level appropriate properties to assist in computation.	Teacher's Edition: 14, 40, 43, 47, 58, 67, 68, 81, 85, 92, 96, 99, 103, 115
PO 8. Apply the symbol “[]” to represent grouping.	Teacher's Edition: 104
PO 9. Use grade-appropriate mathematical terminology.	Teacher's Edition: 29, 68, 76, 81, 92, 99, 104, 107, 112, 115, 117, 124
PO 10. Simplify fractions to lowest terms.	Teacher's Edition: 56, 63, 67, 70, 76, 81, 85, 94, 97, 101, 107, 115
PO 11. Add or subtract proper fractions and mixed numbers with like denominators with regrouping.	Teacher's Edition: 76, 92, 95, 96, 97, 98, 99, 103, 106, 110, 112, 114, 115, 117, 120, 123
PO 12. Add or subtract decimals.	Teacher's Edition: 24, 57, 63, 64, 66, 67, 68, 69, 70, 74, 76, 78, 79, 81, 83, 84, 85, 86, 87, 88, 94, 100, 110

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 13. Multiply decimals.	Teacher's Edition: 60, 63, 67, 70, 74, 78, 81, 85, 86, 88
PO 14. Divide decimals.	Teacher's Edition: 78, 121
PO 15. Simplify numerical expressions using the order of operations with grade-appropriate operations on number sets.	Teacher's Edition: 92, 104, 120

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 24, 32, 35, 38, 39, 42, 43, 45, 48, 49, 50, 66, 69, 82
PO 2. Use estimation to verify the reasonableness of a calculation (e.g., Is 4.1×2.7 about 12?).	Teacher's Edition: 24, 32, 35, 43, 82
PO 3. Round to estimate quantities.	Teacher's Edition: 35, 38, 43, 48, 50, 56, 66, 78, 79, 82
PO 4. Estimate and measure for area and perimeter.	Teacher's Edition: 80, 92
PO 5. Compare estimated measurements between U.S. customary and metric systems (e.g., A yard is about a meter.).	Teacher's Edition: 80, 124

S t r a n d 2 : D a t a A n a l y s i s , P r o b a b i l i t y , a n d D i s c r e t e M a t h e m a t i c s

C o n c e p t 1 : D a t a A n a l y s i s

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 14, 38, 56, 74, 81
PO 2. Construct a double-bar graph, line plot, frequency table, or three-set Venn diagram with appropriate labels and title from organized data.	Teacher's Edition: 18, 26, 29, 42, 49, 56, 85, 92, 110, 114

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 3. Interpret graphical representations and data displays including bar graphs (including double-bar), circle graphs, frequency tables, three-set Venn diagrams, and line graphs that display continuous data.	Teacher's Edition: 26, 33, 70, 74, 78, 86, 88, 106
PO 4. Answer questions based on data found on graphical representations and data displays including bar graphs (including double-bar), circle graphs, frequency tables, three-set Venn diagrams, and line graphs that display continuous data.	Teacher's Edition: 26, 33, 63, 70, 74, 78, 86, 88, 106
PO 5. Identify the mode(s) and mean (average) of given data.	Teacher's Edition: 60, 63, 67, 70, 71, 88, 106, 120, 124
PO 6. Formulate reasonable predictions from a given set of data.	Teacher's Edition: 14, 18, 26, 38, 45
PO 7. Compare two sets of data related to the same investigation.	Teacher's Edition: 26, 45, 123
PO 8. Solve contextual problems using graphs, charts, and tables.	Teacher's Edition: 38, 70, 71, 85, 86, 88, 106, 110, 123

C o n c e p t 2 : P r o b a b i l i t y

Understanding and apply the basic concepts of probability.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Name the possible outcomes for a probability experiments.	Teacher's Edition: 57
PO 2. Describe the probability of events as being: <ul style="list-style-type: none"> • Certain (represented by "1") • Impossible (represented by "0") • Neither certain nor impossible (represented by a fraction less than 1). 	Teacher's Edition: 57, 104, 123
PO 3. Predict the outcome of a grade-level appropriate probability experiment.	Teacher's Edition: 104
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 57, 110, 114, 117

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	Teacher's Edition: 123
PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners, number cubes).	Teacher's Edition: 123
PO 7. Compare the results of two repetitions of the same grade-level appropriate probability experiment.	Teacher's Edition: 123

C o n c e p t 3 : D i s c r e t e M a t h e m a t i c s - S y s t e m a t i c L i s t i n g a n d C o u n t i n g

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Find all possible combinations when one item is selected from each of two sets of different items, using a systematic approach (e.g., shirts: tee shirt, tank top, sweatshirt; pants: shorts, jeans).	Teacher's Edition: 17, 27, 34, 56

S t r a n d 3 : P a t t e r n s , A l g e b r a , a n d F u n c t i o n s

C o n c e p t 1 : P a t t e r n s

Identify patterns and apply pattern recognition to reason mathematically.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Communicate a grade level appropriate iterative pattern, using symbols or numbers.	Teacher's Edition: 14, 18, 26, 27, 38, 40, 43, 45, 53, 60, 61, 63, 67, 71, 86
PO 2. Extend a grade-level appropriate iterative pattern.	Teacher's Edition: 17, 18, 22, 26, 27, 31, 34, 38, 45, 49, 56, 58, 60, 61, 63, 67, 68, 70, 71, 74, 76, 78, 79, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 121, 123
PO 3. Solve grade-level appropriate iterative pattern problems.	Teacher's Edition: 17, 26, 27, 40, 45, 60, 86

Concept 2: Functions and Relationships

Describe and model functions and their relationships.

Grade 5 Performance Objectives	Summer Success [®] : Math Grade 5
PO 1. Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).	Teacher's Edition: 40, 53, 121

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 5 Performance Objectives	Summer Success [®] : Math Grade 5
PO 2. Use variables in contextual situations.	Teacher's Edition: 40, 43
PO 3. Solve one-step equations with one variable represented by a letter or symbol using multiplication of whole numbers, (e.g., $15 = 45 \div 4$).	Teacher's Edition: 40, 43

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 5 Performance Objectives	Summer Success [®] : Math Grade 5
PO 1. Recognize regular polygons,	Teacher's Edition: 14, 38, 52, 59, 61, 62, 63, 68, 76, 110, 124
PO 2. Draw 2-dimensional figures by applying significant properties of each (e.g., Draw a quadrilateral with two sets of parallel sides and four right angles.).	Teacher's Edition: 14, 18, 22, 29, 33, 71, 117
PO 3. Sketch prisms, pyramids, cones, and cylinders.	Teacher's Edition: 99, 115
PO 4. Identify the properties of 2- and 3-dimensional geometric figures using appropriate terminology and vocabulary.	Teacher's Edition: 29, 38, 47, 68, 76, 83, 99, 103, 110
PO 5. Draw points, lines, line segments, rays, and angles with appropriate labels.	Teacher's Edition: 68, 86, 118

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 7. Classify triangles as scalene, isosceles, or equilateral.	Teacher's Edition: 18, 83
PO 10. Understand that the sum of the angles of a triangle is 180°.	Teacher's Edition: 88
PO 11. Draw two congruent geometric figures.	Teacher's Edition: 59
PO 12. Draw two similar geometric figures.	Teacher's Edition: 59, 61
PO 13. Identify the lines of symmetry in a 2-dimensional shape.	Teacher's Edition: 60, 104, 124

C o n c e p t 2 : T r a n s f o r m a t i o n o f S h a p e s

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Demonstrate reflections using geometric figures.	Teacher's Edition: 118

C o n c e p t 3 : C o o r d i n a t e G e o m e t r y

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Graph points in the first quadrant on a grid using ordered pairs.	Teacher's Edition: 65, 89, 124

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Select an appropriate measure of accuracy for a contextual situation (e.g., what unit of measurement would you use to measure the top of your desk?).	Teacher's Edition: 80, 113

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 2. Draw 2-dimensional figures to specifications using the appropriate tools (e.g., Draw a circle with a 2-inch radius.).	Teacher's Edition: 14, 18, 22, 29, 33, 49, 71
PO 3. Determine relationships including volume (e.g., pints and quarts, milliliters and liters).	Teacher's Edition: 33, 47, 70, 99
PO 4. Convert measurement units to equivalent units within a given system (U.S. customary and metric) (e.g., 12 inches = 1 foot, 10 decimeters = 1 meter).	Teacher's Edition: 14, 18, 70, 74, 77, 80, 81, 88, 99, 113
PO 5. Solve problems involving the perimeter of convex polygons.	Teacher's Edition: 18, 22, 31, 38, 49, 53, 60, 67, 70, 71, 74, 78, 83, 86, 92, 103, 110, 117, 120, 121
PO 6. Determine the area of figures composed of two or more rectangles on a grid.	Teacher's Edition: 96
PO 7. Solve problems involving the area of simple polygons.	Teacher's Edition: 18, 31, 33, 42, 56, 86, 92, 96, 121
PO 8. Describe the change in perimeter or area when one attribute (length, width) of a rectangle is altered.	Teacher's Edition: 38, 96

Strand 5: Structure and Logic

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems in contextual situations.

Grade 5 Performance Objectives	Summer Success[®]: Math Grade 5
PO 1. Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.	Teacher's Edition: 14, 26, 29, 33, 38, 42, 43, 45, 47, 60, 67, 74, 78, 79, 85, 88, 92, 96, 97, 99, 103, 110, 114, 117, 118, 120, 123
PO 2. Develop simple algorithms using whole numbers.	Teacher's Edition: 18, 26, 31, 33, 42, 56
PO 3. Develop an algorithm or formula to calculate areas of simple polygons.	Teacher's Edition: 18, 33, 42, 56, 92, 96



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correlated to
Arizona Academic Content Standards: Mathematics
Grade 6

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Express fractions as ratios, comparing two whole numbers (e.g., $\frac{3}{4}$ is equivalent to 3:4 and 3 to 4).	Teacher's Edition: 29, 52, 60, 70, 74, 78, 88, 106, 115
PO 2. Compare two proper fractions, improper fractions, or mixed numbers.	Teacher's Edition: 21, 43, 45, 46
PO 3. Order three or more proper fractions, improper fractions, or mixed numbers.	Teacher's Edition: 17, 21, 22, 26, 33, 36, 43, 45, 46, 56
PO 4. Determine the equivalency between and among fractions, decimals, and percents in contextual situations.	Teacher's Edition: 14, 18, 21, 22, 26, 27, 28, 29, 32, 34, 35, 38, 42, 45, 47, 49, 52, 53, 56, 58, 60, 63, 67, 70, 106
PO 5. Identify the greatest common factor for two whole numbers.	Teacher's Edition: 76, 84, 85, 86, 87, 88, 100
PO 6. Determine the least common multiple for two whole numbers.	Teacher's Edition: 63, 65, 67, 68, 71, 78, 79
PO 7. Express a whole number as a product of its prime factors, using exponents when appropriate.	Teacher's Edition: 56, 60, 63, 67, 74, 75, 81, 85, 88, 89, 95, 97, 98, 99, 106

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 14, 18, 26, 27, 29, 33, 38, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123, 124
PO 2. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 14, 18, 26, 27, 29, 33, 38, 42, 45, 49, 52, 56, 60, 63, 67, 70, 74, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123, 124
PO 3. Apply grade-level appropriate properties to assist in computation.	Teacher's Edition: 14, 17, 43, 49, 52, 101
PO 4. Apply the symbols for “...” or “ ⁻ ” to represent repeating decimals and “:” to represent ratios, superscripts as exponents.	Teacher's Edition: 29, 33, 42, 52, 58, 60, 63, 65, 67, 68, 70, 74, 75, 78, 81, 88, 89, 95, 96, 97, 98, 99, 101, 103, 104, 106, 107, 110, 112, 114, 115, 117, 118, 120, 121, 123, 124
PO 5. Use grade-appropriate mathematical terminology.	Teacher's Edition: 14, 17, 18, 22, 26, 27, 29, 33, 34, 40, 42, 43, 45, 49, 50, 52, 53, 56, 58, 60, 61, 63, 65, 67, 68, 70, 71, 74, 76, 78, 79, 81, 85, 88, 89, 92, 94, 96, 97, 99, 103, 104, 106, 107, 110, 112, 114, 115, 117, 118, 120, 121, 123, 124
PO 6. Simplify fractions to lowest terms.	Teacher's Edition: 14, 25, 28, 34, 45, 56, 58, 60, 63, 67, 70
PO 7. Add or subtract proper fractions and mixed numbers with unlike denominators with regrouping.	Teacher's Edition: 14, 18, 22, 25, 26, 28, 29, 30, 31, 45, 64, 65, 88
PO 8. Demonstrate the process of multiplication of proper fractions using models.	Teacher's Edition: 38, 40, 42, 49, 52
PO 9. Multiply proper fractions.	Teacher's Edition: 17, 29, 38, 40, 42, 43, 47, 49, 52
PO 10. Multiply mixed numbers.	Teacher's Edition: 65, 71, 76, 89
PO 11. Demonstrate that division is the inverse of multiplication of proper fractions.	Teacher's Edition: 18, 33
PO 12. Divide proper fractions.	Teacher's Edition: 17

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 14. Solve problems involving fractions or decimals (including money) in contextual situations.	Teacher's Edition: 14, 18, 26, 27, 29, 38, 42, 49, 70, 74, 88, 103
PO 15. Simplify numerical expressions using the order of operations with grade-appropriate operations on number sets.	Teacher's Edition: 30, 64, 95, 96, 98, 99, 101, 103

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 44, 51, 99, 101, 103, 115, 120
PO 2. Use estimation to verify the reasonableness of a calculation (e.g., Is $5/9 \times 3/7$ more than 1?).	Teacher's Edition: 17, 22, 31
PO 3. Round to estimate quantities in contextual situations (e.g., round up or round down).	Teacher's Edition: 44, 51, 99, 101, 103, 106, 115, 120
PO 4. Estimate and measure for area and perimeter of polygons using a grid.	Teacher's Edition: 52, 56, 60, 67, 70, 74, 78, 81, 85, 88, 110

S t r a n d 2 : D a t a A n a l y s i s , P r o b a b i l i t y , a n d D i s c r e t e M a t h e m a t i c s

C o n c e p t 1 : D a t a A n a l y s i s

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 38
PO 2. Construct a histogram, line graph, scatter plot, or stem-and-leaf plot with appropriate labels and title from organized data.	Teacher's Edition: 29, 33, 49, 52, 63, 67, 85, 99, 103, 110, 117
PO 3. Interpret simple displays of data including double-bar graphs, tally charts, frequency tables, circle graphs, and line graphs.	Teacher's Edition: 33, 52, 99, 103, 106, 110, 120, 123

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 4. Answer questions based on simple displays of data including double bar graphs, tally charts, frequency tables, circle graphs, and line graphs.	Teacher's Edition: 88, 103, 117, 120, 123
PO 5. Find the mean, median (odd number of data points), mode, range, and extreme values of a given numerical data set.	Teacher's Edition: 74, 81, 85, 88, 117, 123
PO 6. Identify a trend (variable increasing, decreasing, remaining constant) from displayed data.	Teacher's Edition: 88, 92, 96, 110, 120
PO 7. Compare trends in data related to the same investigation.	Teacher's Edition: 29, 49, 63, 88
PO 8. Solve contextual problems using bar graphs, tally charts, and frequency tables.	Teacher's Edition: 26, 29, 52, 88

C o n c e p t 2 : P r o b a b i l i t y

Understanding and apply the basic concepts of probability.

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 1. Name the possible outcomes for a probability experiments.	Teacher's Edition: 31, 43, 56, 60, 89
PO 3. Predict the outcome of a grade-level appropriate probability experiment.	Teacher's Edition: 43, 56, 71, 89
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 60, 67
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	Teacher's Edition: 56, 67, 70
PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners, number cubes, cards).	Teacher's Edition: 56, 70
PO 7. Compare the results of two repetitions of the same grade-level appropriate probability experiment.	Teacher's Edition: 70

Concept 3: Discrete Mathematics - Systematic Listing and Counting

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Find all possible outcomes involving a combination of three sets of three items using a systematic approach. (e.g., 3 different shirts, 3 different pairs of pants, and 3 different belts).	Teacher's Edition: 56, 60, 70
PO 2. Determine all possible arrangements given a set with four or fewer objects using a systematic list, table or tree diagram when order is not important.	Teacher's Edition: 56, 60

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Communicate a grade level appropriate recursive pattern, using symbols or numbers.	Teacher's Edition: 31, 34, 40, 50, 56, 58, 67, 81, 85
PO 2. Extend a grade-level appropriate iterative pattern.	Teacher's Edition: 31
PO 3. Solve grade-level appropriate iterative pattern problems.	Teacher's Edition: 31

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Evaluate expressions involving the four basic operations by substituting given fractions for the variable (e.g., $n + 3$, when $n = 1/3$)	Teacher's Edition: 82, 95, 98
PO 5. Solve one-step equations with one variable represented by a letter or symbol using inverse operations with whole numbers.	Teacher's Edition: 17, 22, 31, 65, 68

Concept 4: Analysis of Change

Analyze change in a variable over time and in various concepts.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Identify values on a given line graph or scatter plot (e.g., Given a line showing wages earned per hour, what is the wage at five hours?).	Teacher's Edition: 88, 117

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Classify polygons by their attributes (e.g., number of sides, length of sides, angles, parallelism, perpendicularity).	Teacher's Edition: 14, 38, 42, 60, 63, 118, 124
PO 2. Draw a geometric figure showing specified properties, such as parallelism and perpendicularity.	Teacher's Edition: 38, 42, 43, 65, 68, 103, 115, 118, 124
PO 3. Classify prisms, pyramids, cones, and cylinders by base shape and lateral surface shape.	Teacher's Edition: 92, 96, 99, 103, 106, 110, 112, 114, 115, 117, 120, 123
PO 4. Classify 3-dimensional figures by their attributes.	Teacher's Edition: 92, 94, 96, 97, 99, 101, 103, 104, 106, 107, 110, 112, 114, 115, 117, 120, 121, 123
PO 5. Compare attributes of 2-dimensional figures with 3-dimensional figures.	Teacher's Edition: 96, 99, 106, 110, 114, 117
PO 6. Draw triangles with appropriate labels.	Teacher's Edition: 14, 38
PO 8. Identify the diameter, radius, and circumference of a circle or sphere.	Teacher's Edition: 17, 106, 112, 120
PO 9. Draw a 2-dimensional shape with a given number of lines of symmetry.	Teacher's Edition: 14, 17, 68

C o n c e p t 2 : T r a n s f o r m a t i o n o f S h a p e s

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 2. Perform elementary transformations to create a tessellation.	Teacher's Edition: 45, 49

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 6 Performance Objectives	Summer Success [®] : Math Grade 6
PO 1. Determine the appropriate measure of accuracy within a system for a given contextual situation (e.g., Would you measure the length of your bedroom using inches or feet?).	Teacher's Edition: 14, 44
PO 3. Determine a linear measurement to the appropriate degree of accuracy.	Teacher's Edition: 14, 44
PO 4. Measure angles using a protractor.	Teacher's Edition: 60
PO 5. Convert within a single measurement system (U.S. customary or metric) (e.g., How many ounces are equivalent to two pounds?).	Teacher's Edition: 14, 18, 26, 29, 33, 38, 42, 49, 52, 56, 65, 71, 74, 76, 78, 85, 88, 89, 96, 97, 99, 101, 103, 114
PO 6. Solve problems involving the perimeter of polygons.	Teacher's Edition: 45, 78, 79
PO 8. Distinguish between perimeter and area in contextual situations.	Teacher's Edition: 78
PO 9. Solve problems for the areas of parallelograms (includes rectangles).	Teacher's Edition: 52, 56, 60, 67, 74, 78, 110
PO 10. Identify parallelograms having the same perimeter or area.	Teacher's Edition: 56, 60, 85, 88
PO 11. Determine the actual measure of objects using a scale drawing or map.	Teacher's Edition: 52

**Strand 5:
Structure and Logic**

**Concept 1: Algorithms and Algorithmic
Thinking**

Use reasoning to solve mathematical problems in contextual situations.

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 2. Analyze algorithms for computing with decimals.	Teacher's Edition: 14, 96, 99, 103, 106

**Concept 2: Logic, Reasoning, Arguments, and
Mathematical Proof**

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 6 Performance Objectives	Summer Success[®]: Math Grade 6
PO 1. Solve a simple logic problem from given information (e.g., which of three different people live in which of three different colored houses?).	Teacher's Edition: 18

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correlated to

Arizona Academic Content Standards: Mathematics

Grade 7

Strand 1:
Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Express fractions as terminating or repeating decimals.	Teacher's Edition: 14, 18, 26, 27, 29, 31, 33, 34, 38, 40, 42, 43, 45, 47, 49, 50, 52, 53, 105
PO 2. Identify the greatest common factor for a set of whole numbers.	Teacher's Edition: 32, 74, 81, 87
PO 3. Determine the least common multiple for a set of whole numbers.	Teacher's Edition: 32, 76, 81, 84, 85
PO 4. Choose the appropriate signed real number to represent a contextual situation.	Teacher's Edition: 56, 60, 63, 70
PO 5. Recognize the absolute value of a number used in contextual situations.	Teacher's Edition: 56, 60, 63
PO 6. Locate integers on a number line.	Teacher's Edition: 56, 58, 61, 63, 65, 67
PO 7. Order integers.	Teacher's Edition: 60, 61, 67, 70
PO 8. Classify rational numbers as natural, whole, or integers.	Teacher's Edition: 56

C o n c e p t 2 : N u m e r i c a l O p e r a t i o n s

Understand and apply numerical operations and their relationship to one another.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Add integers.	Teacher's Edition: 56, 58, 60, 61, 63, 65, 69, 71, 82, 115, 118
PO 2. Subtract integers.	Teacher's Edition: 56, 60, 61, 63, 65, 68, 69, 70, 71, 82
PO 3. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 14, 17, 18, 22, 26, 27, 29, 33, 38, 42, 43, 45, 47, 49, 50, 52, 56, 60, 63, 67, 70, 74, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123
PO 4. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 14, 17, 18, 22, 26, 27, 29, 33, 38, 42, 43, 45, 47, 49, 50, 52, 56, 60, 63, 67, 70, 74, 78, 81, 85, 88, 92, 96, 99, 103, 106, 110, 114, 117, 120, 123
PO 5. Multiply integers.	Teacher's Edition: 63, 65, 67, 68, 71, 82, 85, 115, 118
PO 6. Divide integers.	Teacher's Edition: 70, 71, 74, 82, 118
PO 7. Apply grade-level-appropriate properties to assist in computation.	Teacher's Edition: 14, 34, 63, 67, 92
PO 8. Apply the symbols “+” and “-“ to represent positive and negative, and “ ” to represent absolute value.	Teacher's Edition: 56, 58, 60, 61, 63, 70, 71
PO 9. Use grade-appropriate mathematical terminology.	Teacher's Edition: 25, 28, 32, 35, 41, 42, 44, 48, 51, 59, 62, 66, 69, 80, 84, 87, 95, 98, 102, 104, 113, 116, 63, 65, 67, 68, 71, 82, 85, 115, 118
PO 10. Calculate the percent of a given number.	Teacher's Edition: 21, 26, 40, 43, 44, 52, 86, 89
PO 11. Convert numbers expressed in standard notation to scientific notation and vice versa (positive exponents only).	Teacher's Edition: 110, 112, 114, 115, 118, 120, 121, 124
PO 12. Simplify numerical expressions using the order of operations with grade appropriate operations in number sets.	Teacher's Edition: 49, 60, 63, 67, 81, 96

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 110
PO 5. Determine whether an estimation of the circumference of a circle is approximately equal to the actual measure.	Teacher's Edition: 110, 112
PO 6. Verify the reasonableness of estimates made from calculator results within a contextual situation.	Teacher's Edition: 110

S t r a n d 2 : D a t a A n a l y s i s , P r o b a b i l i t y , a n d D i s c r e t e M a t h e m a t i c s

C o n c e p t 1 : D a t a A n a l y s i s

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 38, 42
PO 2. Construct a circle graph with appropriate labels and title from organized data.	Teacher's Edition: 26, 42, 45, 60, 63
PO 3. Determine when it's appropriate to use histograms, line graphs, double bar graphs, and stem-and-leaf plots.	Teacher's Edition: 26, 29, 33, 38, 42, 60, 96
PO 4. Interpret data displays, including histograms, stem-and-leaf plots, circle graphs, and double line graphs.	Teacher's Edition: 38, 42, 52, 63, 67, 70, 74, 78, 81, 85, 88, 96, 99
PO 5. Answer questions based on data displays including histograms, stem-and-leaf plots, circle graphs, and double-line graphs.	Teacher's Edition: 38, 42, 63, 67, 70, 74, 78, 81, 85, 88, 96, 99
PO 6. Find the mean, median, mode, and range of a given numerical data set.	Teacher's Edition: 18, 42

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 7. Interpret trend from displayed data.	Teacher's Edition: 38, 63, 70, 74, 78, 81, 85, 96, 99
PO 8. Compare trends in data related to the same investigation.	Teacher's Edition: 26, 78, 81, 85, 106
PO 9. Solve contextual problems using histograms, line graphs of continuous data, double bar graphs, and stem-and-leaf plots.	Teacher's Edition: 63, 67, 74, 78, 81, 85, 88, 96, 99

C o n c e p t 2 : P r o b a b i l i t y

Understanding and apply the basic concepts of probability.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Determine the probability that a specific event will occur in a single stage probability experiment (e.g., Find the probability of drawing a red marble from a bag with 3 red, 5 blue, and 9 black marbles.).	Teacher's Edition: 110, 111, 114, 117, 120, 123
PO 2. Compare probabilities to determine the fairness of a contextual situation (e.g., If John wins when two or greater shows after a six-sided number cube is rolled and Joaquin wins otherwise, is this a fair game?).	Teacher's Edition: 111
PO 3. Predict the outcome of a grade-level appropriate probability experiment.	Teacher's Edition: 113
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 111, 113, 114, 117, 119
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	Teacher's Edition: 111, 113, 119
PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners, number cubes, cards).	Teacher's Edition: 119
PO 7. Compare the results of two repetitions of the same grade-level appropriate probability experiment.	Teacher's Edition: 119, 122

Concept 3: Discrete Mathematics - Systematic Listing and Counting

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Determine all possible outcomes involving the combination of up to three sets of objects (e.g., how many outfits can be made with 3 pants, 2 tee shirts, and 2 pairs of shoes?)	Teacher's Edition: 88, 120, 123
PO 2. Determine all possible arrangements of a given set, using a systematic list, table, tree diagram, or other representation.	Teacher's Edition: 88, 120, 123

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Communicate a grade level appropriate recursive pattern, using symbols or numbers.	Teacher's Edition: 14, 17, 18, 26, 27, 29, 31, 33, 34, 38, 40, 42, 45, 47, 49, 52, 53, 56, 60, 63, 65, 67, 68, 70, 74, 76, 77, 78, 79, 81, 83, 85, 86, 88, 89, 92, 96, 99, 103, 106, 117
PO 2. Extend a grade-level appropriate recursive pattern.	Teacher's Edition: 14, 17, 18, 26, 27, 29, 31, 33, 34, 38, 40, 42, 45, 47, 49, 52, 52, 56, 60, 63, 65, 67, 68, 70, 74, 76, 77, 78, 79, 81, 83, 85, 86, 88, 89, 92, 96, 99, 103, 106, 117
PO 3. Solve grade-level appropriate recursive pattern problems.	Teacher's Edition: 14, 17, 18, 26, 27, 29, 31, 33, 34, 38, 40, 42, 45, 47, 49, 52, 52, 56, 60, 63, 65, 67, 68, 70, 74, 76, 77, 78, 79, 81, 83, 85, 86, 88, 89, 92, 96, 99, 103, 106, 117

Concept 2: Functions and Relationships

Describe and model functions and their relationships.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).	Teacher's Edition: 53, 65

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Evaluate an expression containing two variables by substituting integers for the variable (e.g., $7x = m$, when $x = -4$ and $m = 12$).	Teacher's Edition: 29, 49, 60, 67, 78, 81, 88, 94, 120, 123
PO 2. Use variables in contextual situations.	Teacher's Edition: 18, 29, 49, 60, 74, 81, 120
PO 3. Translate a written sentence into a one-step, one-variable algebraic equation.	Teacher's Edition: 18, 49, 60
PO 4. Translate a sentence written in context into an algebraic equation involving one operation.	Teacher's Edition: 18, 49, 60
PO 5. Solve one-step equations using inverse operations with positive rational numbers (e.g., $\frac{2}{3}n = 6$).	Teacher's Edition: 49, 50, 60, 63, 67, 85, 110, 114, 120, 121, 123

Concept 4: Analysis of Change

Analyze change in a variable over time and in various concepts.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Analyze change in various linear contextual situations.	Teacher's Edition: 53, 65

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 7 Performance Objectives	Summer Success [®] : Math Grade 7
PO 1. Draw a geometric figure showing specified properties (e.g., Draw an obtuse triangle).	Teacher's Edition: 18, 22, 31, 33, 34, 40, 45, 47, 50, 53, 76, 78, 121, 123, 124
PO 2. Classify 3-dimensional solids by their configuration and properties (e.g., parallelism, perpendicularity, and congruency).	Teacher's Edition: 67, 92, 94, 96, 103, 104, 105, 106, 117, 120, 121, 124
PO 5. Draw polygons with appropriate labels.	Teacher's Edition: 14, 18, 26, 27, 31

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 6. Identify the angles created by two lines and a transversal.	Teacher's Edition: 88
PO 7. Recognize the relationship between central angles and intercepted arcs.	Teacher's Edition: 117, 118
PO 8. Identify arcs and chords of a circle.	Teacher's Edition: 110, 117
PO 9. Model the triangle inequality theorem using manipulatives.	Teacher's Edition: 18
PO 10. Identify corresponding parts of congruent polygons as congruent.	Teacher's Edition: 26, 49, 88, 89

C o n c e p t 2 : T r a n s f o r m a t i o n o f S h a p e s
Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 2. Recognize simple single rotations, translations or reflections on a coordinate grid.	Teacher's Edition: 74, 76, 78, 79, 81, 83, 86

C o n c e p t 3 : C o o r d i n a t e G e o m e t r y
Specify and describe spatial relationships using coordinate geometry and other representational systems.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Graph data points in (x, y) form in any quadrant of a coordinate grid.	Teacher's Edition: 45, 49, 52, 56, 57, 58, 59, 60, 61, 63, 64, 65, 66, 67, 68, 70, 71, 79, 81, 83, 85, 86, 89, 103, 106, 113

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s
Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Determine the appropriate unit of measure for the volume of an object (e.g., cubic inches or cubic cm).	Teacher's Edition: 99, 101, 103, 120, 121, 123, 124

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 3. Convert a measurement from U.S. customary to metric, and vice versa.	Teacher's Edition: 26, 38, 52, 76, 81, 83
PO 4. Solve problems involving the circumference of a circle.	Teacher's Edition: 110
PO 5. Solve problems involving the area of a circle.	Teacher's Edition: 114, 115
PO 6. Solve problems for the areas of parallelograms, triangles, and circles.	Teacher's Edition: 56, 60, 63, 65, 67, 70, 71, 74, 76, 78, 81, 83, 85, 89, 92, 114
PO 7. Identify polygons having the same perimeter or area.	Teacher's Edition: 74
PO 8. Compare estimated to actual lengths based on scale drawings or maps.	Teacher's Edition: 14, 26, 29

Strand 5: Structure and Logic

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems in contextual situations.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 2. Analyze algorithms for computing with fractions.	Teacher's Edition: 14, 18, 21, 29, 30, 39, 42, 45, 62

Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 7 Performance Objectives	Summer Success[®]: Math Grade 7
PO 1. Solve a simple logic problem using multiple variables.	Teacher's Edition: 93, 100

Summer Success[®]: Math © 2001

 correlated to

Arizona Academic Content Standards: Mathematics

Grade 8

Strand 1:

Number Sense and Operations

Concept 1: Number Sense

Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Locate rational numbers on a number line	Teacher's Edition: 29, 67, 70
PO 2. Identify irrational numbers.	Teacher's Edition: 81, 83, 84, 85, 87, 88
PO 3. Classify real numbers as rational or irrational.	Teacher's Edition: 63, 67, 81, 85, 87, 88

Concept 2: Numerical Operations

Understand and apply numerical operations and their relationship to one another.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Select the grade-level appropriate operation to solve word problems.	Teacher's Edition: 17, 27, 33, 34, 42, 44, 45, 49, 52, 58, 83, 85, 86, 92, 94, 97, 101, 103, 107, 113, 116, 119, 122, 123
PO 2. Solve word problems using grade-level appropriate operations and numbers.	Teacher's Edition: 17, 27, 33, 34, 42, 44, 45, 49, 52, 58, 83, 85, 86, 92, 94, 97, 101, 103, 107, 113, 116, 119, 122, 123
PO 3. Determine the square of an integer.	Teacher's Edition: 38, 40, 41, 43, 45, 49, 50, 52, 53, 74, 76, 78, 79, 80, 81, 83, 85, 86, 88, 89, 123
PO 4. Determine the square root of an integer.	Teacher's Edition: 74, 76, 77, 78, 79, 81, 83, 85, 86, 88, 89
PO 5. Identify squaring and finding square roots as inverse operations.	Teacher's Edition: 74, 76, 77, 78, 79, 81, 83, 85, 86, 88, 89

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 6. Apply grade-level-appropriate properties to assist in computation.	Teacher's Edition: 26, 34, 38, 42, 44, 45, 49, 52, 58, 83, 85, 86, 92, 94, 97, 101, 103, 107, 113, 116, 119, 122, 123
PO 7. Apply the symbols “ $\sqrt{\quad}$ ” to represent square root, “ \pm ” to represent roots, and “ $\{ \}$ ” as grouping symbols.	Teacher's Edition: 74, 76, 78, 79, 80, 81, 83, 85, 86, 88, 89, 123
PO 8. Use grade-appropriate mathematical terminology.	Teacher's Edition: 25, 27, 28, 32, 35, 44, 48, 51, 59, 62, 66, 69, 77, 80, 84, 87, 95, 98, 102, 105, 113, 116, 119
PO 9. Calculate the missing value in a percentage problem.	Teacher's Edition: 17, 18, 21, 22, 25, 27, 29, 31, 33, 34, 39, 51, 59, 83, 87
PO 10. Convert standard notation to scientific notation and vice versa.	Teacher's Edition: 92, 94, 95, 96, 97, 101, 102, 103, 104, 106, 107
PO 11. Simplify numerical expressions using the order of operations with grade-appropriate operations on number sets.	Teacher's Edition: 26, 29, 33, 38, 70, 74, 78, 81, 92, 96, 99, 103, 106, 114, 117, 120

C o n c e p t 3 : E s t i m a t i o n

Use estimation strategies reasonably and fluently.

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 1. Solve grade-level appropriate problems using estimation.	Teacher's Edition: 46, 81, 85, 86, 88, 89
PO 2. Use estimation to verify the reasonableness of a calculation (e.g., Is 32 the square root of 64?).	Teacher's Edition: 81, 85, 88
PO 3. Express answers to the appropriate place or degree of precision (e.g., time, money).	Teacher's Edition: 46, 81, 85, 89
PO 4. Verify the reasonableness of estimates made from calculator results within a contextual situation.	Teacher's Edition: 85

Strand 2: Data Analysis, Probability, and Discrete Mathematics

Concept 1: Data Analysis

Understand and apply data collection, organization and representation to analyze and sort data.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Formulate questions to collect data in contextual situations.	Teacher's Edition: 56, 60, 88
PO 2. Construct box-and-whisker plots.	Teacher's Edition: 81, 85, 88
PO 3. Determine the appropriate type of display for a given data set.	Teacher's Edition: 14, 33, 38, 60, 92
PO 4. Interpret box-and-whisker plots, circle graphs, and scatter plots.	Teacher's Edition: 14, 18, 26, 29, 38, 63, 81, 85, 88, 92, 96, 99, 103, 106
PO 5. Answer questions based on box-and-whisker plots, circle graphs, and scatter plots.	Teacher's Edition: 14, 26, 29, 38, 63, 74, 78, 81, 85, 88, 92, 96, 99, 103, 106
PO 6. Solve problems in contextual situations using the mean, median, mode, and range of a given data set.	Teacher's Edition: 42, 45, 49, 74, 78, 81, 83, 85, 98
PO 7. Formulate reasonable predictions based on a given set of data.	Teacher's Edition: 56, 63, 88
PO 8. Compare trends in data related to the same investigation.	Teacher's Edition: 63, 88, 103
PO 9. Solve contextual problems using scatter plots, box-and-whisker plots, and double line graphs of continuous data.	Teacher's Edition: 18, 38, 63, 85, 88, 92, 99
PO 10. Evaluate the effects of missing or incorrect data on the results of an investigation (e.g., Susie's teacher recorded a 39 instead of a 93 on her last quiz, what will happen to Susie's average?).	Teacher's Edition: 119
PO 11. Identify a line of best fit for a scatter plot.	Teacher's Edition: 63, 67
PO 12. Distinguish between causation and correlation.	Teacher's Edition: 56, 70, 103, 106

C o n c e p t 2 : P r o b a b i l i t y

Understanding and apply the basic concepts of probability.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Determine the probability that a specific event will occur in a 2-stage probability experiment.	Teacher's Edition: 93, 110, 111, 114, 120, 121
PO 2. Solve contextual situations using probability (e.g., If the probability of Michelle making a free throw is 0.25, what is the probability that she will make three free throws in a row?).	Teacher's Edition: 27, 110, 111, 114, 120
PO 3. Predict the outcome of a grade-level appropriate probability experiment.	Teacher's Edition: 93, 110
PO 4. Record the data from performing a grade-level appropriate probability experiment.	Teacher's Edition: 110, 114, 117, 120, 123
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	Teacher's Edition: 93, 117, 120, 123
PO 7. Compare the results of two repetitions of the same grade-level appropriate probability experiment.	Teacher's Edition: 123

C o n c e p t 3 : D i s c r e t e M a t h e m a t i c s - S y s t e m a t i c L i s t i n g a n d C o u n t i n g

Understand and demonstrate the systematic listing and counting of possible outcomes.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Determine all possible outcomes involving the combination of two or more sets of objects (e.g., If you roll a six-sides number cube 4 times, how many possible outcomes are possible?).	Teacher's Edition: 110

Strand 3: Patterns, Algebra, and Functions

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Communicate a grade level appropriate iterative or recursive pattern, using symbols or numbers.	Teacher's Edition: 14, 29, 43, 61, 67
PO 2. Extend a grade-level appropriate iterative or recursive pattern.	Teacher's Edition: 14, 17, 18, 22, 26, 27, 29, 33, 34, 38, 40, 42, 43, 45, 49, 52, 56, 58, 67, 74, 78
PO 3. Solve grade-level appropriate iterative or recursive pattern problems.	Teacher's Edition: 14, 15, 29, 43, 58

Concept 2: Functions and Relationships

Describe and model functions and their relationships.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).	Teacher's Edition: 110, 114, 115, 117
PO 2. Distinguish between linear and nonlinear functions, given graphic examples.	Teacher's Edition: 123, 124
PO 3. Determine whether a graph or table is related to a given equation of the form $y = ax^2$ where 'a' is a natural number.	Teacher's Edition: 81
PO 4. Identify independent and dependent variables for contextual situation.	Teacher's Edition: 110, 114

Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Evaluate algebraic expressions by substituting rational values for variables [e.g., $2(ab + ac + bc)$, when $a = 2$, $b = 3/5$, and $c = 4$].	Teacher's Edition: 18, 29, 42, 52, 53, 71, 74, 78, 79, 81, 120

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 2. Use variables in contextual situations.	Teacher's Edition: 14, 18, 26, 29, 31, 33, 34, 42, 92, 94, 96, 97, 114, 115
PO 3. Translate a written sentence or phrase into an algebraic equation or expression, and vice versa (e.g., three less than twice a number is $2n - 3$).	Teacher's Edition: 14, 18, 26, 29, 33, 34, 98, 104, 113, 117
PO 4. Translate a sentence written in context into an algebraic equation involving two operations.	Teacher's Edition: 92, 94, 99, 101, 103, 106, 114, 115, 117
PO 6. Identify an equation or inequality that represents a contextual situation.	Teacher's Edition: 18, 29, 33, 34, 42, 92, 94, 96, 97, 99, 101, 103, 104, 114, 115, 117, 123
PO 7. Solve one-step equations with rational numbers as coefficients or as solutions.	Teacher's Edition: 18, 29, 31, 33, 34, 58, 61, 65, 68, 70, 71, 96, 98, 103, 106
PO 8. Solve one-step equations that model contextual situations.	Teacher's Edition: 29, 33, 96, 97, 103, 106
PO 9. Solve two-step equations with rational coefficients and integer solutions (e.g., $3x + 5 = 11$, $4x - 20 = 8$).	Teacher's Edition: 92, 94, 96, 99, 101, 120
PO 11. Solve a simple algebraic proportion.	Teacher's Edition: 26, 79, 110, 113
PO 12. Solve applied problems using the Pythagorean theorem.	Teacher's Edition: 78, 79, 80, 81, 83, 85, 86, 88, 103

C o n c e p t 4 : A n a l y s i s o f C h a n g e

Analyze change in a variable over time and in various concepts.

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 1. Identify the slope of a line as the rate of change (the ratio of rise over run).	Teacher's Edition: 117, 118

Strand 4: Geometry and Measurements

Concept 1: Geometric Properties

Identify patterns and apply pattern recognition to reason mathematically.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Draw a model that demonstrates basic geometric relationships such as parallelism, perpendicularity, similarity/proportionality, and congruence.	Teacher's Edition: 14, 18, 22, 26, 27, 34, 40, 49, 50, 53, 60
PO 2. Draw 3-dimensional figures by applying properties of each (e.g., parallelism, perpendicularity, congruency).	Teacher's Edition: 110
PO 3. Recognize the 3-dimensional figure represented by a net.	Teacher's Edition: 119
PO 4. Represent the surface area of rectangular prisms and cylinders as the area of their net.	Teacher's Edition: 119
PO 5. Draw regular polygons with appropriate labels.	Teacher's Edition: 14, 17, 27
PO 7. Recognize the relationship between inscribed angles and intercepted arcs.	Teacher's Edition: 106
PO 10. Identify corresponding angles of similar polygons as congruent and sides as proportional.	Teacher's Edition: 14, 33, 49, 50, 52, 74, 81, 99

Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Identify the planar geometric figure that is the result of a given rigid transformation.	Teacher's Edition: 70, 71, 85, 88, 89
PO 2. Model a simple transformation on a coordinate (e.g., Translate right four units and down two units.).	Teacher's Edition: 63, 70, 71, 85, 88, 89

C o n c e p t 3 : C o o r d i n a t e G e o m e t r y

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 1. Use a table of values to graph a linear equation.	Teacher's Edition: 112, 118, 121

C o n c e p t 4 : M e a s u r e m e n t - U n i t s o f M e a s u r e - G e o m e t r i c O b j e c t s

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Grade 8 Performance Objectives	Summer Success[®]: Math Grade 8
PO 1. Solve problems for the area of a trapezoid.	Teacher's Edition: 63, 65
PO 2. Solve problems involving the volume of rectangular prisms and cylinders.	Teacher's Edition: 42, 43, 47, 49, 50, 120, 121, 123, 124
PO 3. Calculate the surface area of rectangular prisms and cylinders.	Teacher's Edition: 110, 115, 117
PO 4. Identify rectangular prisms and cylinders as having the same volume.	Teacher's Edition: 120, 123
PO 5. Find the measure of a missing interior angle in a triangle or quadrilateral.	Teacher's Edition: 18, 22, 26, 27, 31, 34, 38, 42, 45, 53, 99, 119
PO 6. Solve problems using ratios and proportions, given the scale factor.	Teacher's Edition: 99, 110
PO 7. Calculate the length of a side, given two similar triangles.	Teacher's Edition: 33, 53, 99

Strand 5: Structure and Logic

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems in contextual situations.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Describe how to use proportion to solve a problem.	Teacher's Edition: 26, 99, 110
PO 2. Analyze algorithms.	Teacher's Edition: 38, 49, 56, 60, 67, 74, 78, 81, 85, 88

Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

Grade 8 Performance Objectives	Summer Success [®] : Math Grade 8
PO 1. Solve a simple logic problem given the necessary information	Teacher's Edition: 14
PO 2. Identify simple valid arguments using <i>if...then</i> statements (e.g., All squares are rectangles. If quadrilateral ABCD is a rectangle, is it a square?).	Teacher's Edition: 14
PO 4. Verify the Pythagorean theorem using an area dissection argument.	Teacher's Edition: 78



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