

The Arizona Department of Education K-12 Standards Section is providing planning guidance regarding the major and supporting clusters found within AZCCRS in Mathematics. The designations align with the blueprints for AzMERIT. Please consider the following designations when planning an instructional scope for the academic year. To access the AzMERIT blueprints, please visit the AzMERIT website at <http://www.azed.gov/assessment/azmerit/>

## **Grades K through 8 - Major and Supporting Clusters**

Not all of the content in a given grade is emphasized equally in the standards. Some clusters require greater emphasis than the others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. In addition, an intense focus on the most critical material at each grade allows depth in learning, which is carried out through the Standards for Mathematical Practice.

To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grades. The following table identifies the Major Clusters, and Supporting Clusters for this grade.

~[Achieve the Core](#)

Arizona considers **Major Clusters**<sup>1</sup> as groups of related standards that require greater emphasis than some of the others due to the depth of the ideas and the time it takes to master these groups of related standards.

Arizona considers **Supporting Clusters** as groups of related standards that support standards within the major cluster in and across grade levels. Supporting clusters also encompass pre-requisite and extension of grade level content.

Based on the Publishers' Criteria<sup>2</sup> for the Common Core State Standards and the critical areas<sup>3</sup> highlighted at each grade level, Arizona is suggesting instructional time encompass a range of at least 65%-75% for Major Clusters and a range of 25%-35% for Supporting Cluster instruction. See the publisher's criteria at: [www.achievethecore.org/publisherscriteria](http://www.achievethecore.org/publisherscriteria).

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1 At least 65% and up to approximately 85% of class time, with Grades K–2 nearer the upper end of that range, should be devoted to the major work of the grade. For more information, see Criterion #1 of the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics [www.achievethecore.org/publisherscriteria](http://www.achievethecore.org/publisherscriteria).

2 Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics [www.achievethecore.org/publisherscriteria](http://www.achievethecore.org/publisherscriteria).

3 Note, the critical areas are a survey of what will be taught at each grade level; the major work is the subset of topics that deserve the large majority of instructional time during a given year to best prepare students for college and careers.

Arizona College & Career Ready Standards  
Mathematics – Kindergarten

**Kindergarten Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Counting and Cardinality (CC)**

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers

**Operations and Algebraic Thinking (OA)**

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from

**Number and Operations in Base Ten (NBT)**

- Work with numbers 11-19 to gain foundations for place value

**Measurement and Data (MD)**

- ▲ Describe and compare measureable attributes
- ▲ Classify objects and count the number of objects in categories

**Geometry (G)**

- ▲ Identify and describe shapes
- ▲ Analyze, compare, create and compose shapes

Arizona College & Career Ready Standards  
Mathematics – First Grade

**First Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

**Number and Operations in Base Ten (NBT)**

- Work with numbers 11-19 to gain foundations for place value.
- Understand place value.
- Use place value understanding and properties to add and subtract.

**Measurement and Data (MD)**

- Measure lengths indirectly and by iterating length units.
- ▲ Tell and write time.
- ▲ Represent and interpret data.

**Geometry (G)**

- ▲ Reason with shapes and their attributes.

Arizona College & Career Ready Standards  
Mathematics – First Grade

**First Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

**Number and Operations in Base Ten (NBT)**

- Work with numbers 11-19 to gain foundations for place value.
- Understand place value.
- Use place value understanding and properties to add and subtract.

**Measurement and Data (MD)**

- Measure lengths indirectly and by iterating length units.
- ▲ Tell and write time.
- ▲ Represent and interpret data.

**Geometry (G)**

- ▲ Reason with shapes and their attributes.

Arizona College & Career Ready Standards  
Mathematics – Second Grade

**Second Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- ▲ Work with equal groups of objects to gain foundations for multiplication.

**Number and Operations in Base Ten (NBT)**

- Understand place value.
- Use place value understanding and properties to add and subtract.

**Measurement and Data (MD)**

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- ▲ Work with time and money.
- ▲ Represent and interpret data.

**Geometry (G)**

- ▲ Reason with shapes and their attributes.

Arizona College & Career Ready Standards  
Mathematics – Third Grade

**Third Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- Represent and solve problems involving multiplication and division
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

**Number and Operations in Base Ten (NBT)**

- ▲ Use place value understanding and properties of operations to perform multi-digit arithmetic.

**Number and Operations - Fractions (NF)**

- Develop understanding of fractions as numbers

**Measurement and Data (MD)**

- Solve problems involving measurement and estimation of intervals of time, liquid volumes and masses of objects.
- ▲ Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- ▲ Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

**Geometry (G)**

- ▲ Reason with shapes and their attributes.

Arizona College & Career Ready Standards  
Mathematics – Fourth Grade

**Fourth Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- Use the four operations with whole numbers to solve problems.
- ▲ Gain familiarity with factors and multiples.
- ▲ Generate and analyze patterns.

**Number and Operations in Base Ten (NBT)**

- Generalize place value understanding for multi-digit whole numbers.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

**Number and Operations - Fractions (NF)**

- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

**Measurement and Data (MD)**

- ▲ Solve problems involving measurement and conversion of measurements from a larger unit to a small unit.
- ▲ Represent and interpret data.
- ▲ Geometric measurement: understand concepts of angle and measure angles.

**Geometry (G)**

- ▲ Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Arizona College & Career Ready Standards  
Mathematics – Fifth Grade

**Fifth Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Operations and Algebraic Thinking (OA)**

- ▲ Write and interpret numerical expressions.
- ▲ Analyze patterns and relationships.

**Number and Operations in Base Ten (NBT)**

- Understand the place value system.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.

**Number and Operations - Fractions (NF)**

- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

**Measurement and Data (MD)**

- ▲ Convert like measurement units within a given measurement system.
- ▲ Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and addition.

**Geometry (G)**

- ▲ Graph points on the coordinate plane to solve real-world and mathematical problems.
- ▲ Classify two-dimensional figures into categories based on their properties.



Arizona College & Career Ready Standards  
Mathematics – Sixth Grade

**Sixth Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Ratio and Proportional Relationships (RP)**

- Understand ratio concepts and use ratio reasoning to solve problems.

**The Number System (NS)**

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- ▲ Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

**Expressions and Equations (EE)**

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

**Geometry (G)**

- ▲ Solve real-world and mathematical problems involving area, surface area, and volume.

**Statistics and Probability (SP)**

- ▲ Develop understanding of statistical variability.
- ▲ Summarize and describe distributions.

Arizona College & Career Ready Standards  
Mathematics – Seventh Grade

**Seventh Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**Ratio and Proportional Relationships (RP)**

- Analyze proportional relationships and use them to solve real-world and mathematical problems.

**The Number System (NS)**

- Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.

**Expressions and Equations (EE)**

- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

**Geometry (G)**

- ▲ Draw, construct and describe geometrical figures and describe the relationships between them.
- ▲ Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

**Statistics and Probability (SP)**

- ▲ Use random sampling to draw inferences about a population.
- ▲ Draw informal comparative inferences about two populations.
- ▲ Investigate chance processes and develop, use, and evaluate probability needs.

Arizona College & Career Ready Standards  
Mathematics – Eighth Grade

**Eighth Grade Major and Supporting Content Emphasis**

Course content indicated by: ● major content; ▲ supporting content.

**The Number System (NS)**

- ▲ Know that there are numbers that are not rational, and approximate them by rational numbers.

**Expressions and Equations (EE)**

- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

**Functions (F)**

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

**Geometry (G)**

- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- ▲ Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

**Statistics and Probability (SP)**

- ▲ Investigate patterns of association in bivariate data.