

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.

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 grade.

In addition to identifying the Major, Additional, and Supporting Clusters for each grade, suggestions are given to connect the Supporting to the Major Clusters of the grade. Thus, rather than suggesting even inadvertently that some material not be taught, there is direct advice for teaching it, in ways that foster greater focus and coherence.

The major clusters identified in this course represent a subset of the critical areas of focus from the Smarter Balanced 11<sup>th</sup> grade Career and College Readiness assessment. The assessment consortium, PARCC, has identified these clusters as part of the end-of-course boundaries that will be used for their assessments. Washington State is not part of the PARCC consortium but anticipates future instructional materials will be aligned to PARCC's course outline configuration rather than the course sequence outlined in Appendix A from CCSS. Therefore, we encourage districts to consider the below information when determining scope and sequence for their courses.

Numerals in parentheses denote content standards within each cluster applicable for the given course.

Course emphases are indicated by: ■ Major Content; ■ Supporting Content; ● Additional Content.

### The Real Number System (N-RN)

- Use properties of rational and irrational numbers (3)

### Quantities ★ (N-Q)

- Reason quantitatively and use units to solve problems (1, 2, 3)

### Seeing Structure in Expressions (A-SSE)

- Interpret the structure of expressions (1, 2)
- Write expressions in equivalent forms to solve problems (3)

### Arithmetic with Polynomials and Rational Expressions (A-APR)

- Perform arithmetic operations on polynomials (1)
- Understand the relationship between zeros and factors of polynomials (3)

### Creating Equations ★ (A-CED)

- Create equations that describe numbers or relationships (1, 2, 3, 4)

### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Reasoning with Equations and Inequalities (A-REI)**

- Understand solving equations as a process of reasoning and explain the reasoning (1)
- Solve equations and inequalities in one variable (3, 4)
- Solve systems of equations (5, 6)
- Represent and solve equations and inequalities graphically (10, 11, 12)

**Interpreting Functions (F-IF)**

- Understand the concept of a function and use function notation (1, 2, 3)
- Interpret functions that arise in applications in terms of the context (4, 5, 6)
- Analyze functions using different representations (7, 8, 9)

**Building Functions (F-BF)**

- Build a function that models a relationship between two quantities (1)
- Build new functions from existing functions (3)

**Linear, Quadratic, and Exponential Models★ (F-LE)**

- Construct and compare linear, quadratic, and exponential models and solve problems (1, 2, 3)
- Interpret expressions for functions in terms of the situation they model (5)

**Interpreting categorical and quantitative data (S-ID)**

- Summarize, represent, and interpret data on a single count or measurement variable (1, 2, 3)
- Summarize, represent, and interpret data on two categorical and quantitative variables (5, 6)
- Interpret linear models (7, 8, 9)

Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters

#### Congruence (G-CO)

- Experiment with transformations in the plane (1, 2, 3, 4, 5)
- Understand congruence in terms of rigid motions (6, 7, 8)
- Prove geometric theorems (9, 10, 11)
- Make geometric constructions (12, 13)

#### Similarity, Right Triangles, and Trigonometry (G-SRT)

- Understand similarity in terms of similarity transformations (1, 2, 3)
- Prove theorems using similarity (4, 5)
- Define trigonometric ratios and solve problems involving right triangles (6, 7, 8)

#### Circles (G-C)

- Understand and apply theorems about circles (1, 2, 3)
- Find arc lengths and areas of sectors of circles (5)

#### Expressing Geometric Properties with Equations (G-GPE)

- Translate between the geometric description and the equation of a conic section (1)
- Use coordinates to prove simple geometric theorems algebraically (4, 5, 6, 7)

#### Geometric measurement and dimension (G-GMD)

- Explain volume formulas and use them to solve problems (1, 3)
- Visualize relationships between two-dimensional and three-dimensional objects (4)

#### Modeling with Geometry (G-MG)

- Apply geometric concepts in modeling situations (1, 2, 3)

#### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters

#### The Real Number System (N-RN)

- Extend the properties of exponents to rational exponents (1, 2)

#### Quantities★ (N-Q)

- Reason quantitatively and use units to solve problems (2)

#### The Complex Number System (N-CN)

- Perform arithmetic operations with complex numbers (1, 2)
- Use complex numbers in polynomial identities and equations (7)

#### Seeing Structure in Expressions (A-SSE)

- Interpret the structure of expressions (2)
- Write expressions in equivalent forms to solve problems (3, 4)

#### Arithmetic with Polynomials and Rational Expressions (A-APR)

- Understand the relationship between zeros and factors of polynomials (2, 3)
- Use polynomial identities to solve problems (4)
- Rewrite rational expressions (6)

#### Creating Equations★ (A-CED)

- Create equations that describe numbers or relationships (1)

#### Reasoning with Equations and Inequalities (A-REI)

- Understand solving equations as a process of reasoning and explain the reasoning (1, 2)
- Solve equations and inequalities in one variable (4)
- Solve systems of equations (6, 7)
- Represent and solve equations and inequalities graphically (11)

#### Interpreting Functions (F-IF)

- Understand the concept of a function and use function notation (3)
- Interpret functions that arise in applications in terms of the context (4, 6)
- Analyze functions using different representations (7, 8, 9)

#### Building Functions (F-BF)

- Build a function that models a relationship between two quantities (1, 2)
- Build new functions from existing functions (3, 4a)

#### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Linear, Quadratic, and Exponential Models ★ (F-LE)**

- Construct and compare linear, quadratic, and exponential models and solve problems (2, 4)
- Interpret expressions for functions in terms of the situation they model (5)

**Trigonometric Functions (F-TF)**

- Extend the domain of trigonometric functions using the unit circle (1, 2)
- Model periodic phenomena with trigonometric functions (5)
- Prove and apply trigonometric identities (8)

**Expressing Geometric Properties with Equations (G-PE)**

- Translate between the geometric description and the equation for a conic section (2)

**Interpreting categorical and quantitative data (S-ID)**

- Summarize, represent, and interpret data on a single count or measurement variable (4)
- Summarize, represent, and interpret data on two categorical and quantitative variables (6)

**Making Inferences and Justifying Conclusions (S-IC)**

- Understand and evaluate random processes underlying statistical experiments (1, 2)
- Make inferences and justify conclusions from sample surveys, experiments and observational studies (3, 4, 5, 6)

**Conditional Probability and the Rules of Probability (S-CP)**

- Understand independence and conditional probability and use them to interpret data (1, 2, 3, 4, 5)
- Use the rules of probability to compute probabilities of compound events in a uniform probability model (6, 7)