Mathematics - Grade 7

Claim #1
Concepts and Procedures
Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.

- **Ratios and Proportional Relationships**
  - **Target A [m]**
    - Analyze proportional relationships and use them to solve real-world and mathematical problems.
    - Standards: 7.RP 1, 7.RP 2, 7.RP 3
    - DOK: 2

- **The Number System**
  - **Target B [m]**
    - Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
    - Standards: 7.NS 1, 7.RP 2, 7.RP 3
    - DOK: 1, 2

- **Expressions and Equations**
  - **Target C [m]**
    - Use properties of operations to generate equivalent expressions.
    - Standards: 7.EE 1, 7.EE 2
    - DOK: 1, 2

  - **Target D [m]**
    - Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
    - Standards: 7.EE 3, 7.EE 4
    - DOK: 1, 2

*In the tables above, these designations— [m] “major” and [a/s] “additional/supporting” — are provided at the cluster level. See Appendix for further explanation.

Created by Orange USD Student Assessment and Educational Measurement (Bourgeois Ph. D./Torres)
Ref: Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics
Revised 3/16/16
Claim #1
Concepts and Procedures
Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.

Geometry

Target E [a/s]*
Draw, construct and describe geometrical figures and describe the relationships between them.

Standards
7.G 1
7.G 2
7.G 3

DOK 1, 2

Target F [a/s]*
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Standards
7.G 4
7.G 5
7.G 6

DOK 1, 2

Target G [a/s]*
Use random sampling to draw inferences about a population.

Standards
7.SP 1
7.SP 2

DOK 1, 2

Target H [a/s]*
Draw informal comparative inferences about two populations.

Standards
7.SP 3
7.SP 4

DOK 2

Target I [a/s]*
Investigate chance processes and develop, use, and evaluate probability models.

Standards
7.SP 5
7.SP 6
7.SP 7
7.SP 8

DOK 1, 2

*In the tables above, these designations—[m] “major” and [a/s] “additional/supporting”—are provided at the cluster level. See Appendix for further explanation.

Created by Orange USD Student Assessment and Educational Measurement (Bourgeois Ph. D./Torres)
Ref: Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics
Revised 3/16/16
Claim #2
PROBLEM SOLVING
Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.

Target A
Apply mathematics to solve well-posed problems in pure mathematics and those arising in everyday life, society, and the workplace.

Target B
Select and use appropriate tools strategically.

Target C
Interpret results in the context of a situation.

Target D
Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).


DOK 2, 3
DOK 1, 2
DOK 1, 2
DOK 1, 2, 3
Mathematics – Grade 7

Claim #3
COMMUNICATING REASONING
Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.

Target A
Test propositions or conjectures with specific examples.

Target B
Construct, autonomously, 12 chains of reasoning that will justify or refute propositions or conjectures.

Target C
State logical assumptions being used.

Target D
Use the technique of breaking an argument into cases.

Target E
Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.

Target F
Base arguments on concrete referents such as objects, drawings, diagrams, and actions.

Target G
At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)

7.RP.2, 7.NS.A, 7.NS.1, 7.NS.2, 7.EE.1, 7.EE.2

Created by Orange USD Student Assessment and Educational Measurement (Bourgeois Ph. D./Torres)
Ref: Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics
Revised 3/16/16
Mathematics – Grade 7

Claim #4
MODELING AND DATA ANALYSIS
Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems. Claim #3

- **Target A**: Apply mathematics to solve problems arising in everyday life, society, and the workplace.
  - **DOK 2, 3**

- **Target B**: Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.
  - **DOK 2, 3, 4**

- **Target C**: State logical assumptions being used.
  - **DOK 2, 3**

- **Target D**: Interpret results in the context of a situation.
  - **DOK 2, 3**

- **Target E**: Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.
  - **DOK 2, 3, 4**

- **Target F**: Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).
  - **DOK 2, 3**

- **Target G**: Identify, analyze and synthesize relevant external resources to pose or solve problems.
  - **DOK 3, 4**


Created by Orange USD Student Assessment and Educational Measurement (Bourgeois Ph. D./Torres)
Ref: Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics Revised 3/16/16