

# COMMON CORE STATE STANDARDS

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July, 2012



**Proposed, Tentative, Draft**

**Information about the**

**Administration of the**

**Assessment**

# SBAC : Smarterbalanced.org



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## What is Smarter Balanced?

Smarter Balanced is a state-led consortium developing assessments aligned to the Common Core State Standards in English language arts/literacy and mathematics that are designed to help prepare all students to graduate high school college- and career-ready. [READ MORE](#)



### Smarter Balanced Assessment Consortium

Smarter Balanced is a state-led consortium developing assessments aligned to the Common Core State Standards in English language arts/literacy and mathematics that are designed to help prepare all students to graduate high school college- and career-ready. [READ MORE](#)

### Latest News

#### Computer Adaptive Testing Event Now Available

This recorded webinar addresses the advantages of adaptive testing and the critical decision points in designing, developing and administering an effective computer adaptive assessment to measure student achievement and growth.

[READ MORE](#)

#### California's Young Joins Executive Committee

Dr. Donah's Young assistant vice president of academic affairs for the California State University System has been

### School Years

Smarter Balanced assessments will be implemented in the 2014-15 school year. Click below to see what's happening and when.

2009-2010

2010-2011

**2011-2012**

#### What's Happening

Smarter Balanced is creating content specifications aligned to the Common Core State Standards and test development guidelines and materials.

[READ MORE](#)

2012-2013

# SBAC : [Smarterbalanced.org](http://Smarterbalanced.org)

- **March 20 – Content Specifications**
- **April 24 – Mathematics General Item and Task Specifications by grade bands (PDF)**
- **April 24 – Mathematics Sample Items by grade bands (ZIP)**
- **April 16 – Technology-Enhanced Items Guidelines**
- **Many other links**

# Claims for Mathematics Summative Assessment

## Overall Claim

Students can demonstrate progress toward college and career readiness in mathematics.

## Claim #1

Concepts & Procedures “Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.”

## 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.”

## Claim #3

Communicating Reasoning “Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.”

## 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.”

# SBAC Composite Score

- For school, district, and state accountability: a composite “**Total Mathematics**” score at the individual student level.
  - Overall Claim for Grades 3-8 —Students can demonstrate progress toward college and career readiness in mathematics.
  - Overall Claim for Grade 11 —Students can demonstrate college and career readiness in mathematics.
- The composite mathematics score will have “scaling properties that allow for the valid determination of student growth over time.”

# **Tentative** balance of “Claims” on the Assessment

- **#1 (Concepts and Procedures) → 40%**
- **#2 & #4 – Problem Solving and Modeling/Data Analysis → 30%**
- **#3 – Communicating Reasoning → 30%**

# **SBAC** Types of Items

- **Computer Adaptive**
  - **Selected Response (SR) items**
  - **Constructed Response (CR) items**
  - **Technology-Enhanced (TE) items**
- **Performance Tasks (PT)**
  - **TE**
  - **Extended CR**

# CAT Constructed Response

1. Enter a text String (traditional open-response)
2. Create a line
3. Produce a geometric shape

# Selected Response

1. Select a single option from among a set of options (traditional multiple-choice)
2. Select multiple options from among a set of options
3. Create a line
4. Move one or more objects to given set of locations (drag-and-drop)

# Webb's DOK at [smarterbalanced.org](http://smarterbalanced.org)

## **Level 1 Recall**

Recall of a fact, information, or procedure.

## **Level 2 Skill/Concept**

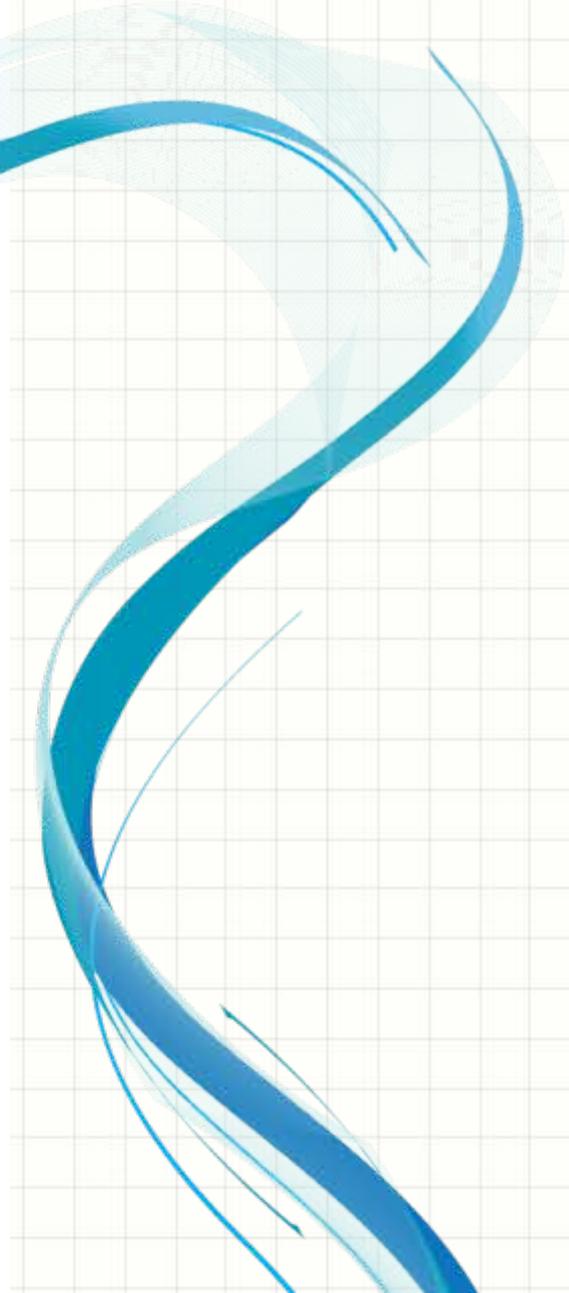
Use information or conceptual knowledge.

## **Level 3 Strategic Thinking**

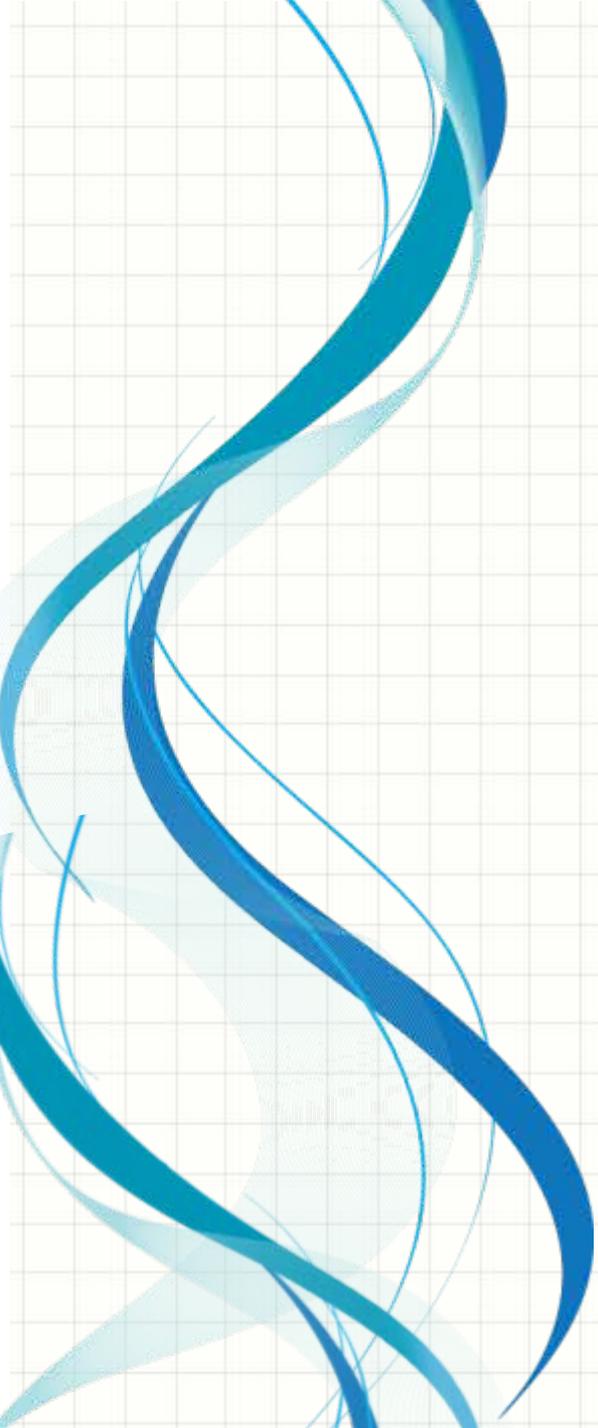
Requires reasoning, developing a plan or sequence of steps, some complexity, more than one possible answer.

## **Level 4 Extended Thinking**

Requires an investigation, time to think and process multiple conditions of the problem.



# Reading the Item Specs



Item Specs  
Claim 1  
NQ Target A

# Claim 1 Item Spec



## HS Mathematics Item Specification C1 TA

### HS Math C1 TA

#### Claim 1: Concepts and Procedures

Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.

#### Content Domain: Number and Quantity

**Target A [m]:** Extend the properties of exponents to rational exponents.

Tasks for this target will require students to rewrite expressions involving radicals and rational exponents. Claim 3 tasks will tap student understanding of the properties of exponents and their ability to identify flawed reasoning applied to this target.

Standards: N-RN.2

DOK Target(s): 1, 2

#### Evidence Required:

1. The student rewrites expressions involving radicals and rational exponents.
2. The student identifies flawed reasoning and/or steps in converting between radical and rational expressions using the properties of exponents.

#### Allowable Item Types:

SR, CR

#### Task Models:

1. SR (DOK 1)

**Prompt Features:** The student is prompted to identify equivalent expression(s) when converting between expressions with radicals and rational exponents.  
**Stimulus:** The student is presented with numerical or algebraic expression(s) containing radicals or rational exponents.

1. CR (DOK 1, 2)

**Prompt Features:** The student is prompted to find the value of or simplify numerical expression(s).  
**Stimulus:** The student is presented with one or more numerical expressions containing radicals or rational exponents.

2. SR (DOK 1, 2)

**Prompt Features:** The student is prompted to identify the flawed step or expression presented in a conversion that leads to an incorrect result and/or identify the correct step or expression for the conversion.  
**Stimulus:** The student is presented with a flawed set of steps or expressions for a numerical or algebraic conversion containing radicals and/or rational exponents.

2. CR (DOK 2)

**Prompt Features 1:** The student is prompted to compare reasoning behind multiple methods of converting between expressions involving radicals and rational exponents.  
**Prompt Features 2:** The student is prompted to determine the flawed step or expression that leads to an incorrect result and explain and/or correct the error.  
**Stimulus:** The student is presented with accurate and/or flawed sets of steps converting between numerical or algebraic radical

# Claim 1 Item Spec continued



## HS Mathematics Item Specification C1 TA

	and rational exponent expressions.
Allowable Stimulus Materials:	numerical expressions involving radicals, numerical expressions involving rational exponents, algebraic expressions involving radicals, algebraic expressions involving rational exponents
Allowable Disciplinary Vocabulary:	exponent, radical exponent, rational exponent, convert, evaluate
Allowable Tools:	
Target-Specific Attributes:	properties of integer exponents, properties of rational exponents
Nontargeted Constructs:	
Accessibility Concerns:	
Sample Items:	MAT.HS.SR.1.00NRN.A.152

\*SR = selected-response item; CR = constructed-response item; TE = technology-enhanced item; ER = extended-response item; PT = performance task

# Sample SR item Data



Mathematics Sample SR Item C1 TA

## MAT.HS.SR.1.00NRN.A.152

Sample Item ID:	MAT.HS.SR.1.00NRN.A.152
Grade:	HS
Claim(s):	<b>Claim 1: Concepts and Procedures</b> Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Assessment Target(s):	1 A: Extend the properties of exponents to rational exponents.
Content Domain:	Number and Quantity
Standard(s):	N-RN.2
Mathematical Practice(s):	1, 2, 6
DOK:	2
Item Type:	SR
Score Points:	2
Difficulty:	M
Key:	TTFTF
Stimulus/Source:	
Target-specific attributes (e.g., accessibility issues):	
Notes:	Calculator tool must be turned off for this item.

# Sample SR item

For items 1a – 1e, determine whether each equation is True or False.

1a.  $\sqrt{32} = 2^{\frac{5}{2}}$

True       False

1b.  $16^{\frac{3}{2}} = 8^2$

True       False

1c.  $4^{\frac{1}{2}} = \sqrt[4]{64}$

True       False

1d.  $2^8 = (\sqrt[3]{16})^6$

True       False

1e.  $(\sqrt{64})^{\frac{1}{3}} = 8^{\frac{1}{6}}$

True       False

*Scoring Rubric for Multi-part Items:*

*Responses to this item will receive 0-2 points, based on the following:*

# Sample SR item rubric

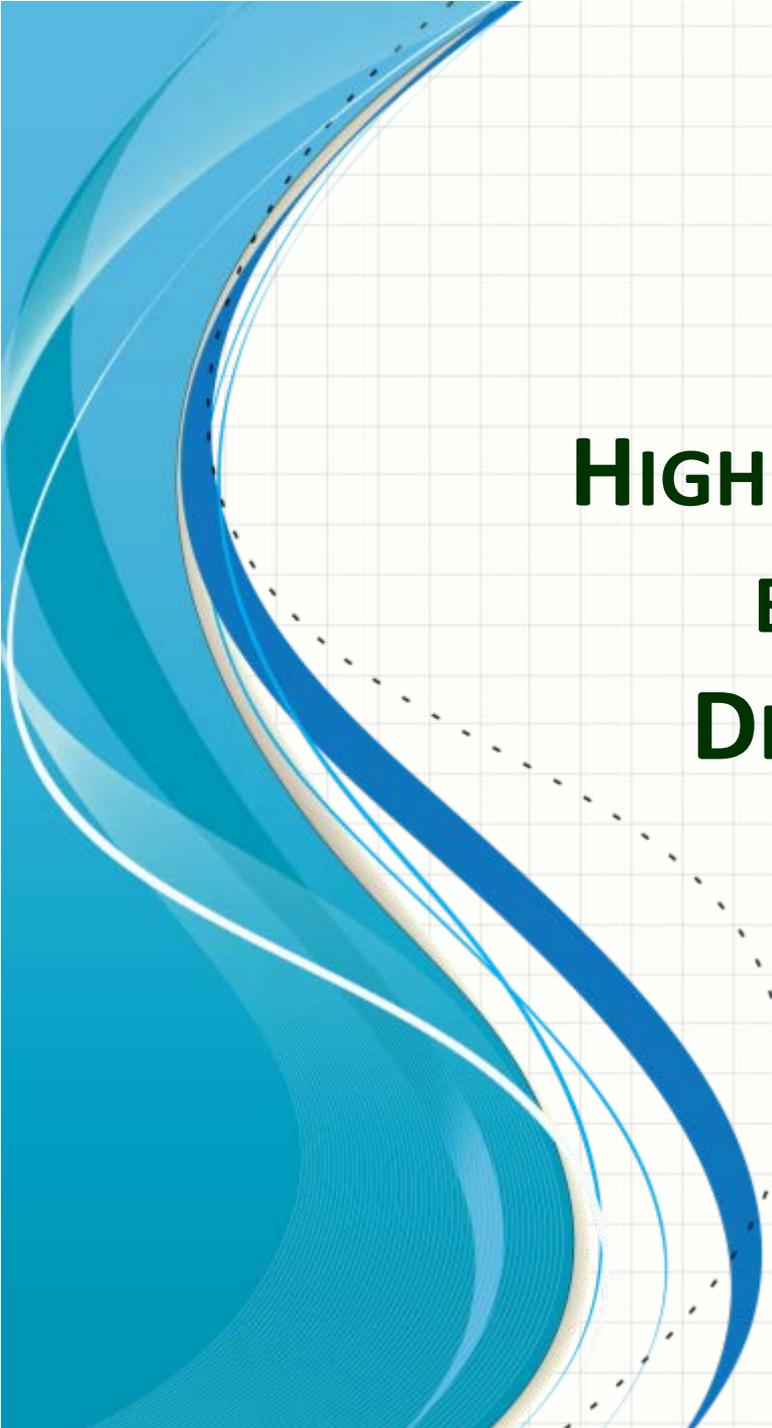
Mathematics Sample SR Item C1 TA



**2 points:** TTFTF The student has a solid understanding of how to rewrite expressions involving radical and rational exponents to determine equivalent forms.

**1 point:** TTFTT, TTFFF, TTTTF, TTFFT, TTTFF The student only has a basic understanding of how to rewrite expressions involving radical and rational exponents. The student can evaluate expressions containing square roots and expressions containing integer exponents as well as some simple rational exponents, such as  $\frac{1}{2}$  or  $\frac{3}{2}$ . The student has difficulty evaluating expressions with cube roots or fourth roots and expressions with roots raised to integer or rational exponents. The student must answer parts a and b correctly, as well as at least one of the remaining parts (exception TTTTT would suggest a guessing pattern).

**0 points:** All other possibilities. The student demonstrates inconsistent understanding of how to rewrite expressions involving radical and rational exponents.



**HIGH SCHOOL ITEMS DEVELOPED  
BY SBAC (AT THIS TIME) ARE  
DESIGNED TO ASSESS COLLEGE  
AND CAREER READINESS IN  
GRADE 11, AND ARE NOT  
COURSE SPECIFIC!!**

# HS Mathematics Item Specification C1 TP

## HS Math C1 TP

### Claim 1: Concepts and Procedures

Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.

### Content Domain: Statistics and Probability

**Target P [m]:** Summarize, represent, and interpret data on a single count or measurement variable.

Tasks for this target will require students to use appropriate statistics to explain difference in shape, center, and spread of two or more different data sets, including the effect of outliers.

<b>Standards:</b>	S-ID.1, S-ID.2, S-ID.3
<b>DOK Target(s):</b>	1, 2
<b>Evidence Required:</b>	<p>1. The student uses statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets.</p> <p>2. The student interprets and explains the differences in shape, center, and spread in the context of two or more data sets.</p> <p>3. The student interprets and explains the effects of outliers on the shape, center, and spread of two or more data sets.</p>
<b>Allowable Item Types*:</b>	SR, CR
<b>Task Models:</b>	<p>1. SR (DOK 1, 2)  <b>Prompt Features 1:</b> The student is prompted to identify one or more graphs and/or data sets which have specified characteristics (e.g., greatest spread, smallest center, etc.).  <b>Prompt Features 2:</b> The student is prompted to identify correct statement(s) that compare the mean and/or median OR the interquartile range (IQR) and/or standard deviation of two or more graphs and/or data sets.  <b>Prompt Features 3:</b> The student is prompted to identify which statistic is appropriate to use based on the shape of the distribution (i.e., mean and standard deviation when data is normally distributed or symmetric or the median and IQR when the data is skewed).  <b>Stimulus:</b> The student is presented with two or more graphs and/or data sets.</p> <p>1. CR (DOK 2)  <b>Prompt Features:</b> The student is prompted to compare the mean and/or median OR the interquartile range (IQR) and/or standard deviation of two or more graphs and/or data sets.  <b>Stimulus:</b> The student is presented with two or more graphs and/or data sets.</p> <p>2. CR (DOK 2)  <b>Prompt Features 1:</b> The student is prompted to explain the differences in shape, center, and/or spread of the data sets, including the influence of possible outliers, based on the context</p>

# Item specs for Claim 2

## HS Math Claim 2

### Primary Claim 2: Problem Solving

Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.

Secondary Claim(s): Items/tasks written primarily to assess Claim 2 will necessarily involve some Claim 1 content targets. Related Claim 1 targets should be listed below the Claim 2 targets in the item form. If Claim 3 or 4 targets are also directly related to the item/task, list those following the Claim 1 targets in order of prominence.

Primary Content Domain: Each item/task should be classified as having a primary, or dominant, content focus. The content should draw upon the knowledge and skills articulated in the progression of standards leading up to Grade 11.

Secondary Content Domain(s): While tasks developed to assess Claim 2 will have a primary content focus, components of these tasks will likely produce enough evidence for other content domains that a separate listing of these content domains needs to be included where appropriate.

Assessment Targets: Any given item/task should provide evidence for several Claim 2 assessment targets. Each of the following targets should not lead to a separate task: it is in using content from different areas, including work studied in earlier grades, that students demonstrate their problem solving proficiency. Multiple targets should be listed in order of prominence as related to the item/task.

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

Under Claim 2, the problems should be completely formulated, and students should be asked to find a solution path from among their readily available tools.

**Target B: Select and use appropriate tools strategically. (DOK 1, 2)**

Tasks used to assess this target should allow students to find and choose tools; for example, using a "Search" feature to call up a formula (as opposed to including the formula in the item stem) or using a protractor in physical space.

**Target C: Interpret results in the context of a situation. (DOK 2)**

Tasks used to assess this target should ask students to link their answer(s) back to the problem's context. In early grades, this might include a judgment by the student of whether to express an answer to a division problem using a remainder or not based on the problem's context. In later grades, this might include a rationalization for the domain of a function being limited to positive integers based on a problem's context (e.g., understanding that the number of buses required for a given situation cannot be  $32\frac{1}{2}$ , or that the negative values for the independent variable in a quadratic function modeling a basketball shot have no meaning in this context).

**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 1, 2, 3)**

For Claim 2 tasks, this may be a separate target of assessment explicitly asking students to use one or more potential mappings to understand the relationship between quantities. In some cases, item stems might suggest ways of mapping relationships to scaffold a problem for Claim 2 evidence.

Relevant Verbs:	understand (often in conjunction with one or more other relevant verbs), solve, apply, describe, illustrate, interpret, and analyze
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DOK Target(s):	1, 2, 3
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# Grade 6 Mathematics Item Specification Claim 2

## Grade 6 Math Claim 2

### Primary Claim 2: Problem Solving

Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.

**Secondary Claim(s):** Items/tasks written primarily to assess Claim 2 will necessarily involve some Claim 1 content targets. Related Claim 1 targets should be listed below the Claim 2 targets in the item form. If Claim 3 or 4 targets are also directly related to the item/task, list those following the Claim 1 targets in order of prominence.

**Primary Content Domain:** Each item/task should be classified as having a primary, or dominant, content focus. The content should draw upon the knowledge and skills articulated in the progression of standards leading up to Grade 6.

**Secondary Content Domain(s):** While tasks developed to assess Claim 2 will have a primary content focus, components of these tasks will likely produce enough evidence for other content domains that a separate listing of these content domains will need to be included where appropriate.

**Assessment Targets:** Any given item/task should provide evidence for several Claim 2 assessment targets. Each of the following targets should not lead to a separate task: it is in using content from different areas, including work studied in earlier grades, that students demonstrate their problem-solving proficiency. Multiple targets should be listed in order of prominence as related to the item/task.

### Target A: Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace. (DOK 2, 3)

Under claim 2, the problems should be completely formulated, and students should be asked to find a solution path from among their readily available tools.

### Target B: Select and use appropriate tools strategically. (DOK 1, 2)

Tasks used to assess this target should allow students to find and choose tools; for example, using a "Search" feature to call up a formula (as opposed to including the formula in the item stem) or using a protractor in physical space.

### Target C: Interpret results in the context of a situation. (DOK 2)

Tasks used to assess this target should ask students to link their answer(s) back to the problem's context. In early grades, this might include a judgment by the student of whether to express an answer to a division problem using a remainder or not, based on the problem's context. In later grades, this might include a rationalization for the domain of a function being limited to positive integers based on a problem's context (e.g., understanding that the number of buses required for a given situation cannot be  $32\frac{1}{2}$ , or that the negative values for the independent variable in a quadratic function modeling a basketball shot have no meaning in this context).

### 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 1, 2, 3)

For Claim 2 tasks, this may be a separate target of assessment explicitly asking students to use one or more potential mappings to understand the relationship between quantities. In some cases, item stems might suggest ways of mapping relationships to scaffold a problem for Claim 2 evidence.

Relevant Verbs:	understand (often in conjunction with one or more other relevant verbs), solve, apply, describe, illustrate, interpret, and analyze
DOK Target(s):	1, 2, 3

# Grade 6 Mathematics Item Specification Claim 2

## Claim 2 Rationale:

### **Mathematical Practice 1: Make sense of problems and persevere in solving them.**

Mathematically proficient students:

- explain to themselves the meaning of a problem and look for entry points to its solution.
- analyze givens, constraints, relationships, and goals.
- make conjectures about the form and meaning of the solution attempt.
- plan a solution pathway rather than simply jump into a solution.
- consider analogous problems and try special cases and simpler forms of insight into the solutions.
- monitor and evaluate their progress and change course if necessary.
- transform algebraic expressions or change the viewing window on their graphing calculator to get information.
- explain correspondences between equations, verbal descriptions, tables, and graphs.
- draw diagrams of important features and relationships, graph data, and search for regularity or trends.
- use concrete objects or pictures to help conceptualize and solve a problem.
- check their answers to problems using a different method.
- ask themselves, "Does this make sense?"
- understand the approaches of others in solving complex problems and identify correspondences between approaches.

### **Mathematical Practice 5: Use appropriate tools strategically.**

Mathematically proficient students:

- consider available tools when solving a mathematical problem. (Tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software.)
- are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and the tools' limitations.
- detect possible errors by using estimations and other mathematical knowledge.

### **Mathematical Practice 7: Look for and make use of structure.**

Mathematically proficient students:

- look closely to discern a pattern or structure.
  - Young students might notice that three and seven more is

# Grade 6 Mathematics Item Specification Claim 2

	<p>the same amount as seven and three more or they may sort a collection of shapes according to how many sides the shapes have.</p> <ul style="list-style-type: none"> <li>○ Later, students will see <math>7 \times 8</math> equals the well-remembered <math>7 \times 5 + 7 \times 3</math>, in preparation for the distributive property.</li> <li>○ In the expression <math>x^2 + 9x + 14</math>, older students can see the 14 as <math>2 \times 7</math> and the 9 as <math>2 + 7</math>. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems.</li> </ul> <ul style="list-style-type: none"> <li>• step back for an overview and can shift perspective.</li> <li>• see complicated things, such as some algebraic expressions, as single objects or composed of several objects.</li> </ul> <p><b>Mathematical Practice 8: Look for and express regularity in repeated reasoning.</b> Mathematically proficient students:</p> <ul style="list-style-type: none"> <li>• notice if calculations are repeated.</li> <li>• look for both general methods and shortcuts.             <ul style="list-style-type: none"> <li>○ Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations and conclude they have a repeated decimal.</li> <li>○ Middle school students might abstract the equation <math>(y-2)/(x-1) = 3</math> by paying attention to the calculation of slope as they repeatedly check whether the points are on the line through <math>(1, 2)</math> with a slope 3.</li> </ul> </li> <li>• maintain oversight of the process of solving a problem, while attending to the details.</li> <li>• continually evaluate the reasonableness of intermediate results.</li> </ul>
<p>Allowable Item Types*:</p>	<p>SR, CR, ER, TE</p>
<p>Task Models:</p>	<p><b>Problems in pure mathematics.</b> These are well-posed problems within mathematics where the student must find an approach, choose which mathematical tools to use, carry the solution through, and explain the results.</p> <p><b>Design problems.</b> These are well-posed problems within a real- or fantasy-world context where the student must find an approach, choose which mathematical tools to use, carry the solution through, and explain the results.</p> <p><b>Planning problems.</b> Planning problems involve the coordinated analysis of time, space, cost, and people. They are design tasks with a time dimension added. Well-posed problems of this kind assess the student's ability to make the connections needed between different parts of mathematics.</p>

# Grade 6 Mathematics Item Specification Claim 2

	Note: This is not a complete list; other types of tasks that fit the criteria above may be included.
Allowable Tools:	protractor, ruler, calculator
Key Nontargeted Constructs:	
Target-Specific Attributes:	Items/tasks must be real-world and should take from 5–15 minutes to solve.
Accessibility Concerns:	Real-world problems may sometimes be text-heavy. Translation tools and dictionaries should be available to ELL students. Text readers should be available to students, as necessary.
Sample Items:	MAT.06.CR.2.000RP.A.096, MAT.06.ER.2.000EE.C.172

\*SR = selected-response item; CR = constructed-response item; TE = technology-enhanced item; ER = extended-response item; PT = performance task

# Grade 6 Mathematics Sample CR Item Claim 2

## MAT.06.CR.2.000RP.A.096 Claim 2

Sample Item ID:	MAT.06.CR.2.000RP.A.096
Grade:	06
Primary Claim:	<b>Claim 2: Problem Solving</b> Students can solve a range of complex, well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.
Secondary Claim(s):	<b>Claim 1: Concepts and Procedures</b> Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Primary Content Domain:	Ratios and Proportional Relationships
Secondary Content Domain(s):	The Number System
Assessment Target(s):	2 A: Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.  1 A: Understand ratio concepts and use ratio reasoning to solve problems.  1 C: Compute fluently with multi-digit numbers and find common factors and multiples.
Standard(s):	6.RP.3, 6.NS.3
Mathematical Practice(s):	1, 6
DOK:	2
Item Type:	CR
Score Points:	2
Difficulty:	M
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Target-Specific Attributes (e.g., accessibility issues):	
Notes:	No symbols (like \$, -, or °) will be allowed in the response boxes. The first box will only allow up to 3 numeric characters, and the second box will allow up to 6 numeric characters, including the decimal point. The calculator tool will be unavailable for this item.

Alia wants to buy pizza for a party.

- 40 to 50 people will be coming to the party.
- A large pizza from Paolo's Pizza Place serves 3 to 4 people.
- Each large pizza from Paolo's Pizza Place costs \$11.50.

# Grade 6 Mathematics Sample CR Item Claim 2

## **Part A**

Alia wants to buy enough pizza so that people will not be hungry, and wants to have the least amount of pizza left over. How many large pizzas should Alia buy?

pizzas

## **Part B**

If Alia buys the number of large pizzas that you determined in *Part A*, how much money will she spend on pizza?

\$

## *Sample Top-Score Response:*

*Part A*  
13 pizzas

*Part B*  
\$149.50

## *Scoring Rubric:*

Responses to this item will receive 0-2 points, based on the following:

**2 points:** The student demonstrates a thorough understanding of how to apply mathematics to solve problems involving ratio and rate reasoning and computation with multi-digit decimals. The student provides an estimate of 12-15 pizzas and correctly computes the cost for that number of pizzas.

**1 point:** The student demonstrates a partial understanding of how to apply mathematics to solve problems involving ratio and rate reasoning and computation with multi-digit decimals. The student provides an low or high estimate of 9-11 or 16-18 pizzas, but correctly computes the cost for that number of pizzas OR the student provides an estimate of 12-15 pizzas but does not correctly compute the cost for that number of pizzas.

**0 points:** The student shows inconsistent or no understanding of how to apply mathematics to solve problems involving ratio and rate reasoning and computation with multi-digit decimals.

# HS Mathematics Sample PT Form: Claim 4

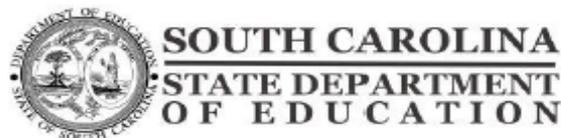
**MAT.HS.PT.4.CANSB.A.051**

<b>Sample Item ID:</b>	<b>MAT.HS.PT.4.CANSB.A.051</b>
<b>Title:</b>	<b>Packaging Cans</b>
<b>Grade:</b>	<b>HS</b>
<b>Primary Claim:</b>	<b>Claim 4: Modeling and Data Analysis</b> Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.
<b>Secondary Claim(s):</b>	<b>Claim 2: Problem Solving</b> Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.  <b>Claim 1: Concepts and Procedures</b> Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
<b>Primary Content Domain:</b>	<b>Geometry</b>
<b>Secondary Content Domain(s):</b>	<b>Algebra, Functions, Statistics, and Probability</b>
<b>Assessment Target(s):</b>	<b>4A: Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.</b>  <b>4E: Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.</b>  <b>4D: Interpret results in the context of a situation.</b>  <b>4G: Identify, analyze, and synthesize relevant external resources to pose or solve problems.</b>  <b>4B: Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.</b>  <b>2B: Select and use appropriate tools strategically.</b>  <b>1G: Create equations that describe numbers or relationships.</b>  <b>1H: Understand solving equations as a process of reasoning and explain the reasoning.</b>  <b>1L: Interpret functions that arise in applications in terms of a context.</b>  <b>1P: Summarize, represent, and interpret data on a single count or measurement variable.</b>

# HSAP and EOCEP

- The Education Accountability Act (EAA) requires the administration of the End-of-Course Examination Program (EOCEP) and the High School Assessment Program (HSAP) in English language arts (ELA) and mathematics. If the EAA is in effect in its current form in 2013-14, the EOCEP English 1 examination will continue to be based on the *South Carolina Academic Standards for English Language Arts 2008* and the EOCEP Algebra 1 examination will continue to be based on the *South Carolina Academic Standards for Mathematics 2007*. The HSAP will continue to be based on the HSAP skills.

# <http://ed.sc.gov/agency/pr/standards-and-curriculum/documents/NumberAlgebraFunctionsCCSSconnections.pdf>

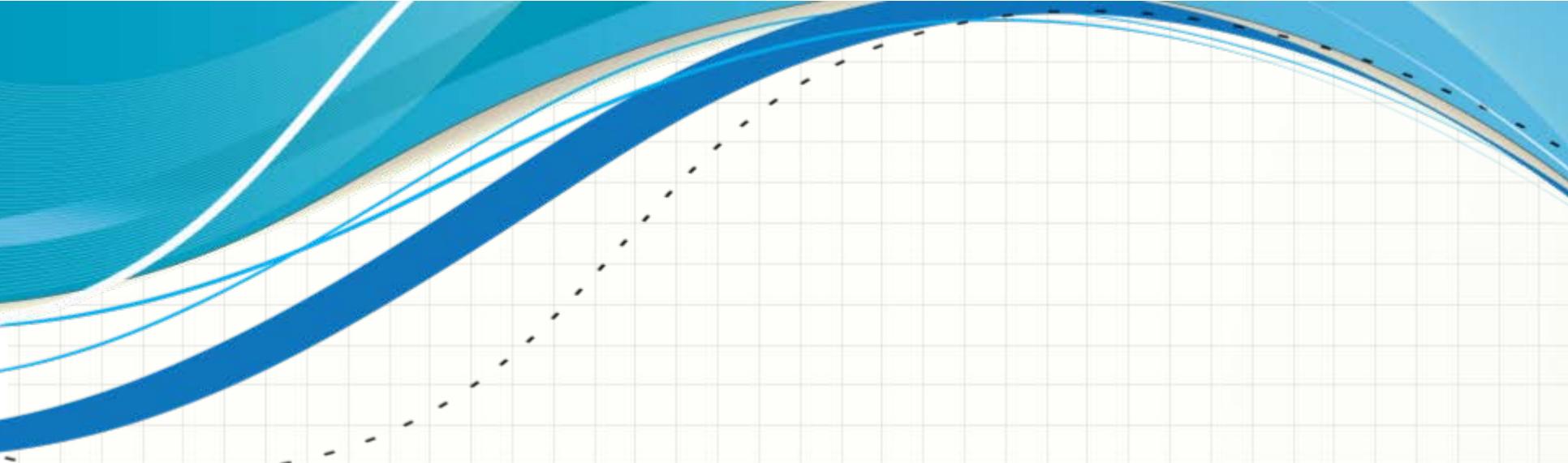


## Connections between the Common Core State Standards (CCSS) for Mathematics and the South Carolina Academic Standards for Mathematics 2007 Number and Quantity, Algebra, and Functions

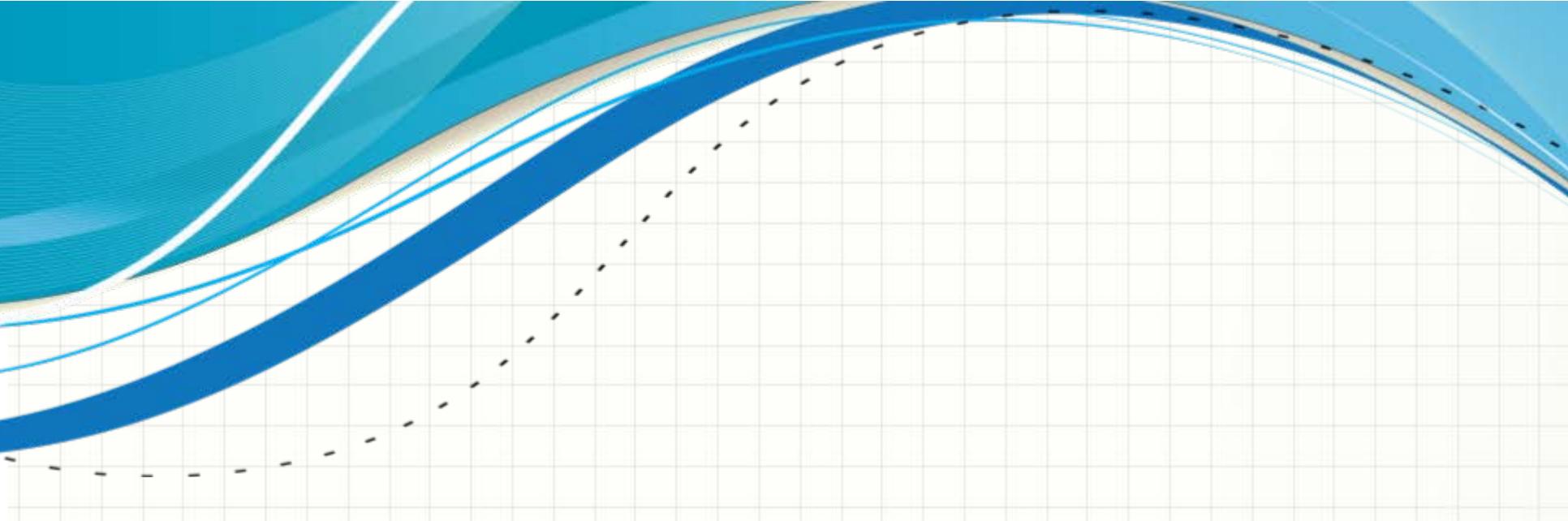
Common Core State Standards	Where Reflected in the 2007 South Carolina Math Standards and Indicators for Number and Quantity, Algebra, and Functions	Cognitive Level
<b>RN The Real Number System</b>		
<b>Extend the properties of exponents to rational exponents.</b>		
1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. <i>For example, we define <math>5^{1/3}</math> to be the cube root of 5 because we want <math>(5^{1/3})^3 = 5^{(1/3)3}</math> to hold, so <math>(5^{1/3})^3</math> must equal 5.</i>	<b>EA-2.1</b> Exemplify elements of the real number system (including integers, rational numbers, and irrational numbers).	>
2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.	<b>EA-2.2</b> Apply the laws of exponents and roots to solve problems. <b>IA-4.7</b> Carry out a procedure to perform operations with expressions involving rational exponents (including addition, subtraction, multiplication, division, and exponentiation).	>
<b>Use properties of rational and irrational numbers.</b>		
1. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.		

# Summary

- Common Core State Standards for mathematics is coming!
- Learn what you can now!
- Begin preparing for new assessments in 2014-15.
- Keep your eyes open for changes in plans (from SBAC and from SC).



**QUESTIONS?**



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