What is a Claim?

The Smarter Balanced summative mathematics assessment and its relationship to instruction

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Goals of Video

- This video focuses on understanding:
  - what an assessment claim is
  - how the claims are related to the content standards and the Standards for Mathematical Practices
  - how the claims inform both instruction and assessment

A claim is:

- A statement of critical mathematical learning outcomes for students.
  - Each claim focuses on the knowledge and skills students should learn and develop.
  - The claims are based on the Standards for Mathematical Practices.
  - They apply to grades 3–8 and grade 11.
  - Students produce evidence for each claim when they take the summative assessment.
  - A single item may provide evidence for more than one claim.

Overall Assessment Claims

- **Claim for Grades 3-8:**
  - "Students can demonstrate progress toward college and career readiness in mathematics."

- **Claim for Grade 11:**
  - "Students can demonstrate college and career readiness in mathematics."

Assessment Claims 1- 4

- **Claim 1 – Concepts & Procedures** – The student can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
- **Claim 2 – Problem Solving** – The student 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** – The student 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** – The student can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.

Where to find information on the claims

- Other Claim videos
- Content Specifications

Claims are based on the content standards

- Examples of standards that informed each claim include:
  - Claim 1: Standard 4.NBT.A.3 – Use place value understanding to round multi-digit whole numbers to any place.
  - Claim 2: Standard 6.RP.A.3b – Solve unit rate problems including those involving unit pricing and constant speed.
  - Claim 3: Standard 8.G.B.6 – Explain a proof of the Pythagorean Theorem and its converse.
  - Claim 4: Standard N-Q.A.2 – Define appropriate quantities for the purpose of descriptive modeling.

More information about the focus clusters and standards for Claims 2, 3, and 4

- Claim-specific documents

Claims and the mathematics practices

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

Claim 1

- Claim 1 – Concepts and Procedures
  - Practice 5 - Use appropriate tools strategically
  - Practice 6 - Attend to precision
  - Practice 7 - Look for and make use of structure
  - Practice 8 - Look for and express regularity in repeated reasoning

Claim 2

- Claim 2 – Problem Solving
  - Practice 1 - Makes sense of problems and persevere in solving them
  - Practice 5 - Use appropriate tools strategically
  - Practice 7 – Look for and make use of structure
  - Practice 8 – Look for and express regularity in repeated reasoning

Claim 3

- Claim 3 – Communicating Reasoning
  - Practice 3 - Construct viable arguments and critique the reasoning of others
  - Practice 6 - Attend to precision

Claim 4

- Claim 4 – Modeling and Data Analysis
  - Practice 2 – Reason abstractly and quantitatively
  - Practice 4 – Model with mathematics
  - Practice 5 – Use appropriate tools strategically

How to find more information about the relationship of claims and practices

- Claim 1 through 4 videos
- Content Specifications

How the claims inform assessment

- The claims are what the summative assessment seeks to measure.
- The claims guide item development.
- The strong connections between the claims, standards, and practices ensure that students are assessed on the concepts, procedures, and application they should develop at each grade level.

How Claim 1 informs instruction

- Claim 1 – Concepts and Procedures
  - Students should have opportunities to develop both:
    - conceptual understanding
    - procedural fluency
  - Instructional time must:
    - explicitly organize and connect current learning to previous learning.

How Claim 2 informs instruction

- Claim 2 – Problem Solving
  - Students should:
    - use mathematics to solve a variety of problems.
    - use of a variety of strategies
    - choose a path to find a solution, not follow a pre-determined path.
  - Teachers should:
    - monitor student progress
    - guide comparisons of solution methods

How Claim 3 informs instruction

- Claim 3 – Communicating Reasoning
  - Student should experience:
    - verbal discourse
    - written discourse
  - Teachers need to:
    - guide student when constructing and evaluating arguments.

How Claim 4 informs instruction

- Claim 4 – Modeling and Data Analysis
  - Students should:
    - apply mathematics to real-world situations
    - analyze and solve problems
    - formalizing a problem that is not fully formed
  - Teachers can:
    - allow students to engage in “productive struggle”

Claims 1- 4
Multiplying fractions

Claim 1	Claim 2	Claim 3	Claim 4
$\frac{5}{6} \times \frac{1}{2}$	Nicolas is helping to paint a wall at a park near his house as part of a community service project. He had painted half of the wall yellow when the park director walked by and said, "This wall is supposed to be painted red." Nicolas immediately started painting over the yellow portion of the wall. By the end of the day, he had repainted $\frac{5}{6}$ of the yellow portion red. What fraction of the entire wall is painted red at the end of the day?	Nicolas says that he has $\frac{7}{12}$ of the wall left to paint red. Is he correct? Explain your reasoning.	Draw a model of the wall and indicate what part of the wall is painted red, what part is painted yellow and what remains to be painted at the end of the day.

Deep dive into examples

- **Illustrative Mathematics webpage**
  - Provides activities at each grade level that cover all the claims and are aligned to the standards.
- **Smarter Balanced Tools for Teachers**
  - Provides teacher vetted activities and lessons that incorporate the formative assessment process and engage students with the skills described in the four claims.

Further help

- Specific Claim 1 through 4 videos to get a more complete picture of each claim and the skills students should develop through focused instruction.