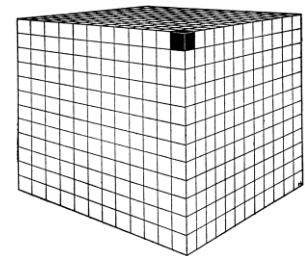


COMMON CORE STATE STANDARDS FAQ

- What are the Common Core State Standards?
 - English/ Language Arts
 - Literacy in History/Social Science, Science, and Technical Subjects
 - Mathematics
 - Released in June 2010
 - Shifts

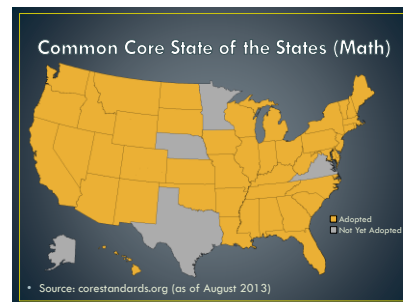


Solving Real-World Geometry Problems

High School	Middle School	Elementary School
<ul style="list-style-type: none"> G.MG.1 – Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). G.G.MD.3 – Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. 	<ul style="list-style-type: none"> 8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. 7.G.6 – Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects. 6.G.2 – Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 	<ul style="list-style-type: none"> 5.MD.3 – Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume. 4.MD.3 – Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. 3.MD.7.d – Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems. 2.MD.1 – Measure the length of an object by selecting and using appropriate tools such as rulers, protractors, paper strips, and measuring tapes. 1.MD.2 – Estimate the length of an object as a whole number of length units. K.MD.1 – Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

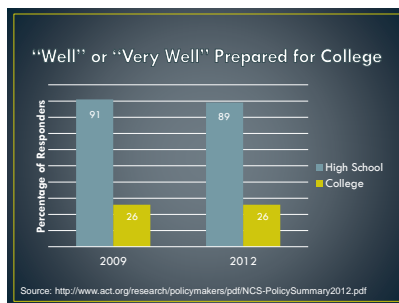
COMMON CORE STATE STANDARDS FAQ

- What are the Common Core State Standards?
- Where did they come from?
 - National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO).
 - Race to the Top funding
 - “Internationally benchmarked standards and assessments that prepare students for success in college and the work place.”
- Who has adopted them?



COMMON CORE STATE STANDARDS FAQ

- What are the Common Core State Standards?
- Where did they come from?
- Who has adopted them?
- Why do we need them?
 - What is the purpose of K-12 Ed?
 - College readiness
 - ACT National Curriculum Survey
 - Surveyed 9,937 educators.



COMMON CORE STATE STANDARDS FAQ

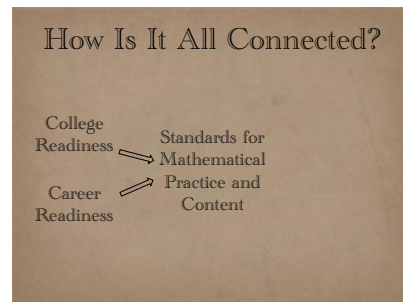
- What are the Common Core State Standards?
- Where did they come from?
- Who has adopted them?
- Why do we need them?
 - What is the purpose of K-12 Ed?
 - College readiness
 - Career readiness
 - Association of American Colleges and Universities survey
 - Survey over 300 employers with at least 25 employees and many new hires.

	More	Less	Same
Critical thinking and analytical reasoning skills	More	Less	Same
Analyzing and solving complex problems	More	Less	Same
Communicating effectively orally and in writing	More	Less	Same
Applying knowledge and skills to real-world setting	More	Less	Same
Working w/ numbers and understanding statistics	More	Less	Same

Source: http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf

COMMON CORE STATE STANDARDS FAQ

- What are the Common Core State Standards?
- Where did they come from?
- Who has adopted them?
- Why do we need them?
 - What is the purpose of K-12 Ed?
 - Standardized across the nation
 - Differences in how states measure proficiency
 - Resources
 - Students



Standards for Mathematical Practice

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.

BREAKING DOWN THE CONTENT STANDARDS

- Domain and Conceptual Categories

Domain and Conceptual Categories

	K	1	2	3	4	5	6	7	8	HS
Counting & Cardinality										
Number and Operations in Base Ten										
Number and Operations - Fractions										
Operations and Algebraic Thinking										
Measurement and Data										
Ratio and Proportional Relationships										
The Number System										
Expressions and Equations										
Functions										
Geometry										
Statistics and Probability										
Number and Quantity										
Algebra										
Statistics & Probability										

Source: <http://www.doe.mass.gov/achievementcurriculum/resources/Implementing-Indiana-common-core-standards>

BREAKING DOWN THE CONTENT STANDARDS

- Domain and Conceptual Categories
- Understanding the standards

HOME
ILLUSTRATIONS
K-8 STANDARDS
HIGH SCHOOL STANDARDS
PRACTICE STANDARDS
FRACTIONS PROGRESSION
FREQUENTLY ASKED QUESTIONS
COMMUNITY
ABOUT US
TERMS OF USE

Illustrative Mathematics provides guidance to states, assessment consortia, testing companies, and curriculum developers in identifying the scope and focus of mathematics work that directly supports the implementation of the Common Core State Standards, and by providing other tools that support implementation of the standards.

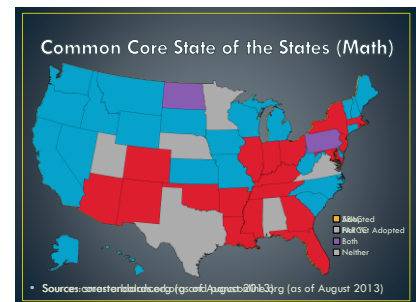
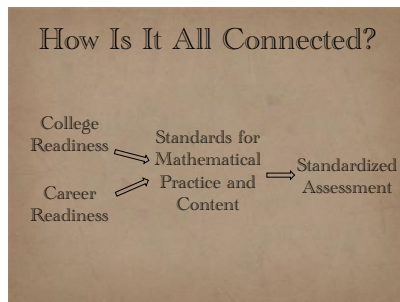
	K	1	2	3	4	5	6	7	8
Counting and Cardinality									
Number and Operations in Base Ten									
Number and Operations - Fractions									
Operations and Algebraic Thinking									
Measurement and Data									
Statistics and Probability									
Ratio and Proportional Relationships									
Expressions and Equations									
Functions									
Geometry									
Statistics and Probability									

Show only illustrated standards (7)
Reveal standards automatically (7)

Grade 3
Unit 3
Module 1
Lesson 1

Develop understanding of fractions as numbers.

1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. (see illustrations)
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. (see illustrations)
3. Represent a fraction $1/b$ on a number line diagram by partitioning the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part starting at 0 is labeled with the number $1/b$ on the number line.
4. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its




SMARTER BALANCED ASSESSMENT

- Students in grades 3 through 8 and grade 11 will be assessed.
- Computer adaptive
- Both electronic and human scoring.
- Interim assessments
- Practice tests released on May 29th.

SMARTER BALANCED PROBLEM TYPES

- Selected-response items
 - Prompt students to select one or more responses from a set of options.

3 Look at the figure.








Each square in the figure is 1 square unit. Which equation shows the area of this figure in square units?

- 8 + 6 + 8 + 6 = 28 square units
- 8 + 8 + 8 + 8 + 8 = 40 square units
- 6 + 6 + 6 + 6 + 6 + 6 = 42 square units
- 6 + 6 + 6 + 6 + 6 + 6 + 6 = 48 square units

Source: <https://sbapt.tds.airast.org/student/>

7 Choose all the shapes that are quadrilaterals.

- 
- 
- 
- 
- 

Source: <https://sbapt.tds.airast.org/student/>

21 For questions 19-1d, choose Yes or No to show if the number 7 will make each equation true.

- 1a. $6 \times \square = 36$ Yes No
- 1b. $8 \times \square = 64$ Yes No
- 1c. $49 \div \square = 7$ Yes No
- 1d. $54 \div \square = 6$ Yes No

Source: <https://sbapt.tds.airast.org/student/>

2 Drag each number into the correct answer space.

Factors of 27	Factors of 35
1	1
3 5 7 9 27 35	

Source: <https://sbapt.tds.airast.org/student/>

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

2 points: **Y**YNN. The student has a solid understanding of 2/5 as well as an equivalent form of 2/5.

1 point: **Y**NNN, **Y**NN, **Y**NN. The student has only a basic understanding of 2/5. Either the student doesn't recognize an equivalent fraction for 2/5 or does understand that all 5 parts must be equal sized in figure 1b.

0 points: YYY, YNNY, NNNN, NNNY, NYNN, NYNN, NYNY, NYNN, NNNN, NYNY, **N**NYN, NNNY. The student demonstrates inconsistent understanding of 2/5 or answers "Y" to figure 1d, clearly showing a misunderstanding of what 2/5 means. Figure 1d is considered a "disqualifier" and an answer of "Y" to this part of the item would cancel out any other correct responses as "guesses" on the part of the student.

Source: <http://sampleitems.smarterbalanced.org/itempreview/sbact/>

SMARTER BALANCED PROBLEM TYPES

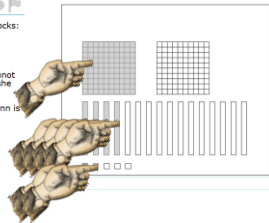
- Selected-response items
- Technology-enhanced items
 - Use technology to collect evidence through a non-traditional response type, such as editing text or drawing an object.

Source: <http://sampleitems.smarterbalanced.org/itempreview/sbact/>

5 Joanna has the following blocks:

- 2 hundreds
- 16 tens
- 5 ones

Lynn thinks that Joanna cannot model 242 with the blocks she has. Click blocks to show that Lynn is incorrect.



Source: <https://sbapt.tds.airast.org/student/>

9

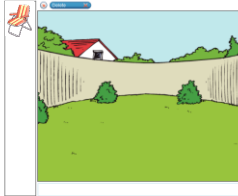
Solve the problem.

$904 - 256 = \square$

Source: <https://sbacpt.tds.airast.org/student/>

16

Four families bring chairs to Mr. Smith's party. Each family brings the same number of chairs. Three more chairs are needed to seat all 27 guests.

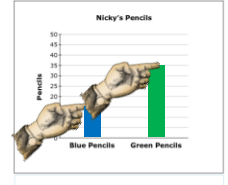


Source: <https://sbacpt.tds.airast.org/student/>

20

Nicky has 4 packs of pencils. Each pack contains 15 pencils. In each pack, 5 pencils are blue and the rest green.

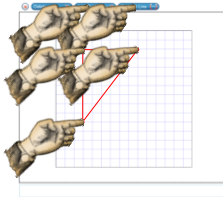
Create a bar graph to show how many of each color pencil Nicky has. Click the graph to show where the top of the bar should go.



Source: <https://sbacpt.tds.airast.org/student/>

1

On the grid provided, draw a right triangle with whole number side lengths and a hypotenuse of 10 units. The length of the side of each square is one unit.

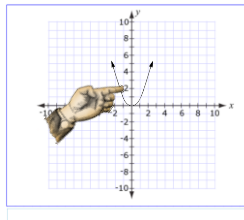


Source: <https://sbacpt.tds.airast.org/student/>

1

The graph of $y = x^2$ is shown on the grid.

Drag the graph to show $y = (x - 4)^2 + 2$.



Source: <https://sbacpt.tds.airast.org/student/>

**SMARTER
BALANCED
PROBLEM
TYPES**

- Selected-response items
- Technology-enhanced items
- Constructed-response items
 - Students produce a text and/or numerical response in order to collect evidence about their knowledge or understanding.

Source: <http://sampleitems.smarterbalanced.org/itempreview/sbac/>

Look

For full credit (2 points):

- Student reaches the correct conclusion.
- AND
- Student provides sufficient reasoning to support this conclusion.

For partial credit (1 point):

- Student reaches the correct conclusion but does not provide sufficient reasoning to support this conclusion.
- OR
- Student does not reach the correct conclusion but provides reasoning to support this conclusion that contains a minor conceptual or computation error.

Source: <https://sbacpt.tds.airast.org/student/>

Robert
House
Ti
4:00
5:00
Robert
Temp

For full credit (2 points):

- Student reaches the correct conclusion.
- AND
- Student provides sufficient reasoning to support this conclusion.

For partial credit (1 point):

- Student reaches the correct conclusion but does not provide sufficient reasoning to support this conclusion.
- OR
- Student does not reach the correct conclusion but provides reasoning to support this conclusion that contains a minor conceptual or computation error.

Source: <https://sbacpt.tds.airast.org/student/>

**SMARTER
BALANCED
PROBLEM
TYPES**

- Selected-response items
- Technology-enhanced items
- Constructed-response items
- Performance tasks
 - Measure a student's ability to integrate knowledge and skills across multiple standards.

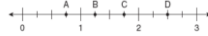
Source: <http://sampleitems.smarterbalanced.org/itempreview/sbac/>

Performance Tasks

- Elementary School: Planting Tulips
- Middle School: Taking a Field Trip
- High School: Thermometer Crickets

Assessments: MEAP vs. Common Core

14 Which point on the number line below best represents the location of $\frac{5}{4}$?



- A A
- B B
- C C
- D D

Source: http://www.mi.gov/documents/mde/F08_Gr5_Math_Rel_Doc_269502_7.pdf

Assessments: MEAP vs. Common Core

Label the point where $\frac{2}{3}$ belongs on the number line. Be as exact as possible.



Source: <http://www.illustrativemathematics.org/illustrations/170>

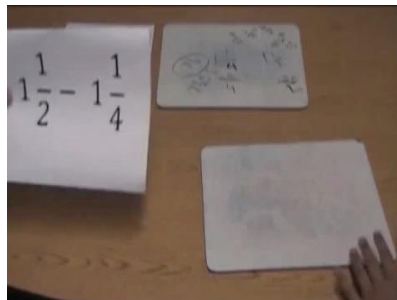
WHAT DOES IT LOOK LIKE...

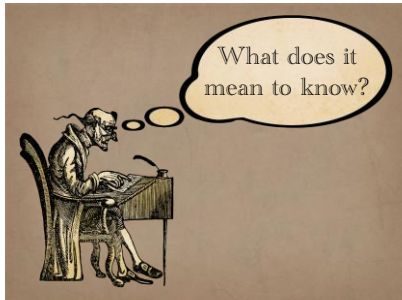
- when students **can** work with numbers but **cannot**:
 - critically think
 - applying knowledge and skills to real-world settings
 - analyze and solve complex problems
- when students have procedural skill but not conceptual understanding or the ability to apply mathematics?
- when students struggle to process mathematics at a higher depth of knowledge?

How far apart are the exits on this freeway: Jct 90 and Jefferson Blvd?



$$1\frac{1}{2} - 1\frac{1}{4}$$





Michigan Education Assessment Program (MEAP)

54 Subtract $\frac{2}{3} - \frac{1}{4}$

A $\frac{1}{1}$

B $\frac{5}{12}$

C $\frac{1}{4}$

D $\frac{1}{12}$

Source: http://www.mi.gov/documents/index/F08_Gr6_Math_Rel_Doc_269511_7.pdf

NEXT STEPS

- Standards for Mathematical Practice
 - Talking and writing about mathematics
- Rigor
 - Application
 - Conceptual understanding
 - Procedural skill and fluency

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