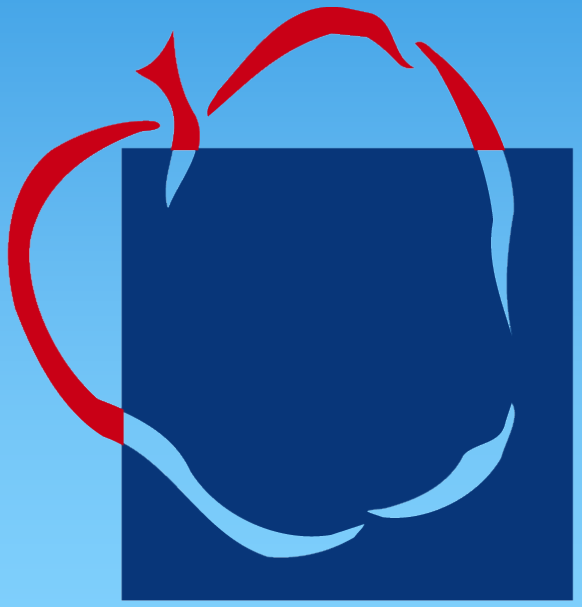
Welcome to..
A walk in the PARCC!



ANNE ARUNDEL
COUNTY PUBLIC SCHOOLS

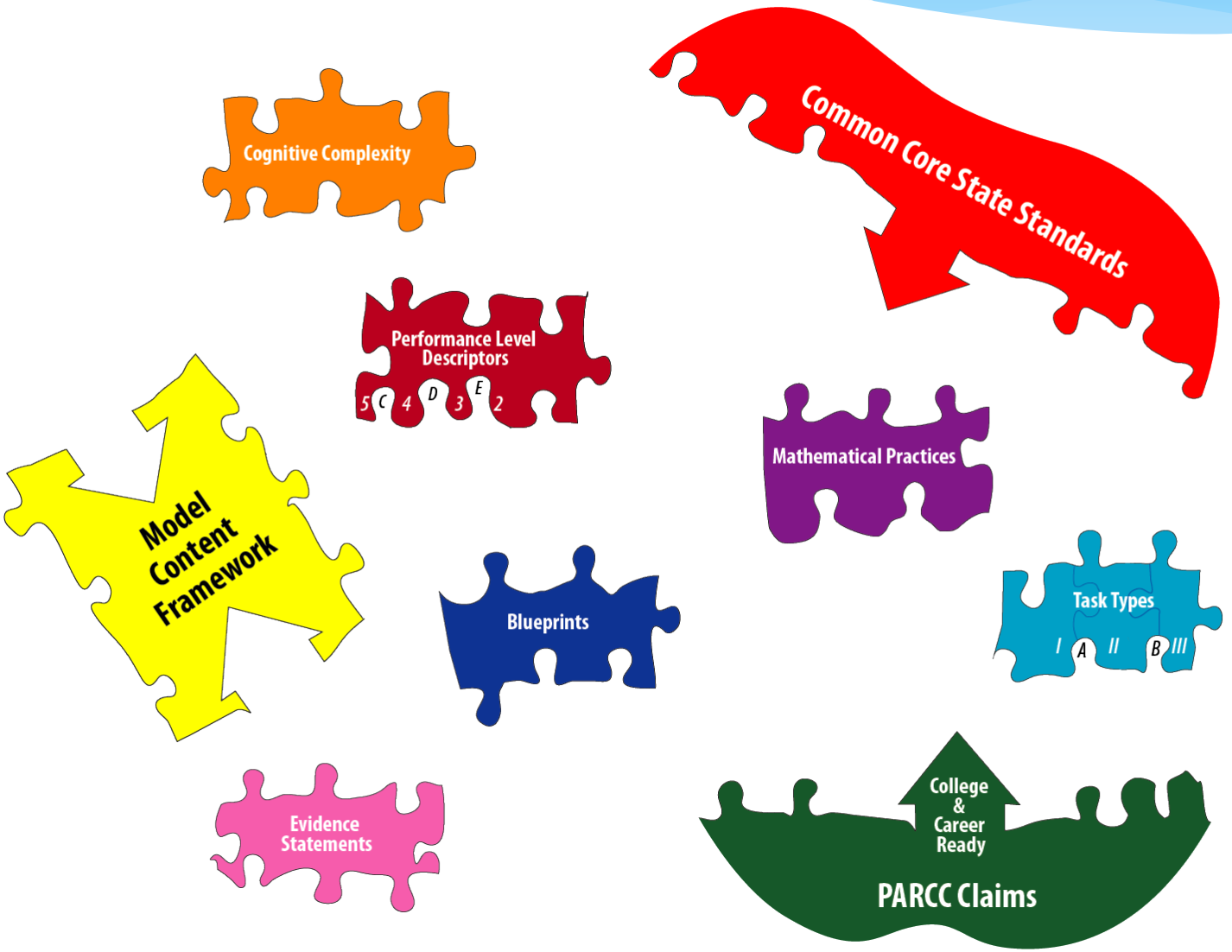

PARCC
assessments
states
assessment
students
support
million
K-12
pathway
system
Columbia
College
career
District
New
school
U.S.
provide
development
readiness
ready
Ohio
Jersey
Virgin
Indiana
Mississippi
Arizona
Arkansas
Kentucky
Tennessee
Maryland
Rhode
Colorado
Mexico
Florida
Louisiana
Massachusetts
Pennsylvania
York
Standards
Common
Core
2014-15
Partnership
Education's
Department
Islands
Illinois
Readiness
Assessment
consortium
instruction
accountability
technology
information
Vision
Island
Read
Creates
grant
together
use
many
new
measure
competition
tools
range
working
English
learn
Race
anchored
better
careers
include
math
download
serve
high
educators
plus
grade
develop
levels
resources
Collectively
takes
communications
progress
State
educate
building
Careers
high-quality
3rd
received
full
set
inform
timely
application
Top
goal
committed
College
system's
Supports
Advances
Makes
teachers
produced
documents
States
year
student
Builds
history
administer
next-generation
common
design
build
classroom
end
audiences
Virgin

Participants will be able to define PARCC's components and consider how to apply them in their specific content areas.

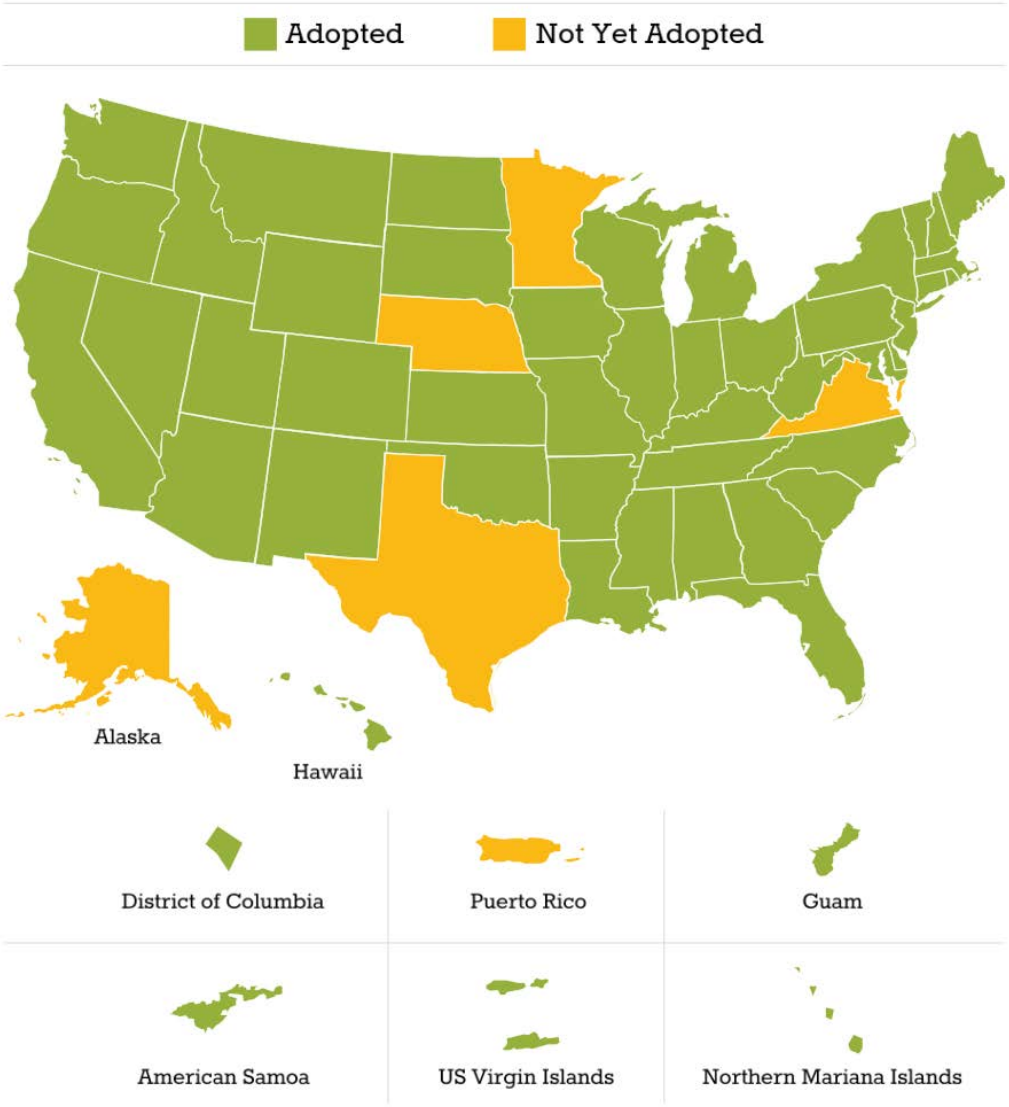


Partnership for Assessment of Readiness for College and Careers

What are the pieces of PARCC???



Common Core States



"It is not the strongest of the species...nor the most intelligent that survives. It is the one most adaptable to change."

Charles Darwin

PARCC's Challenges

1. Answer the College and Career Claim
2. Provide accurate national and international data
3. Design tasks to assess 21st century skills – thinking and technology
4. Provide diagnostic/instructional data

PARCC: History and Purpose

It used to be all about measuring the student…

…and then…

…the Russians launched Sputnik!!!

PARCC History and Purpose

1983 – A Nation at Risk
*trust changed

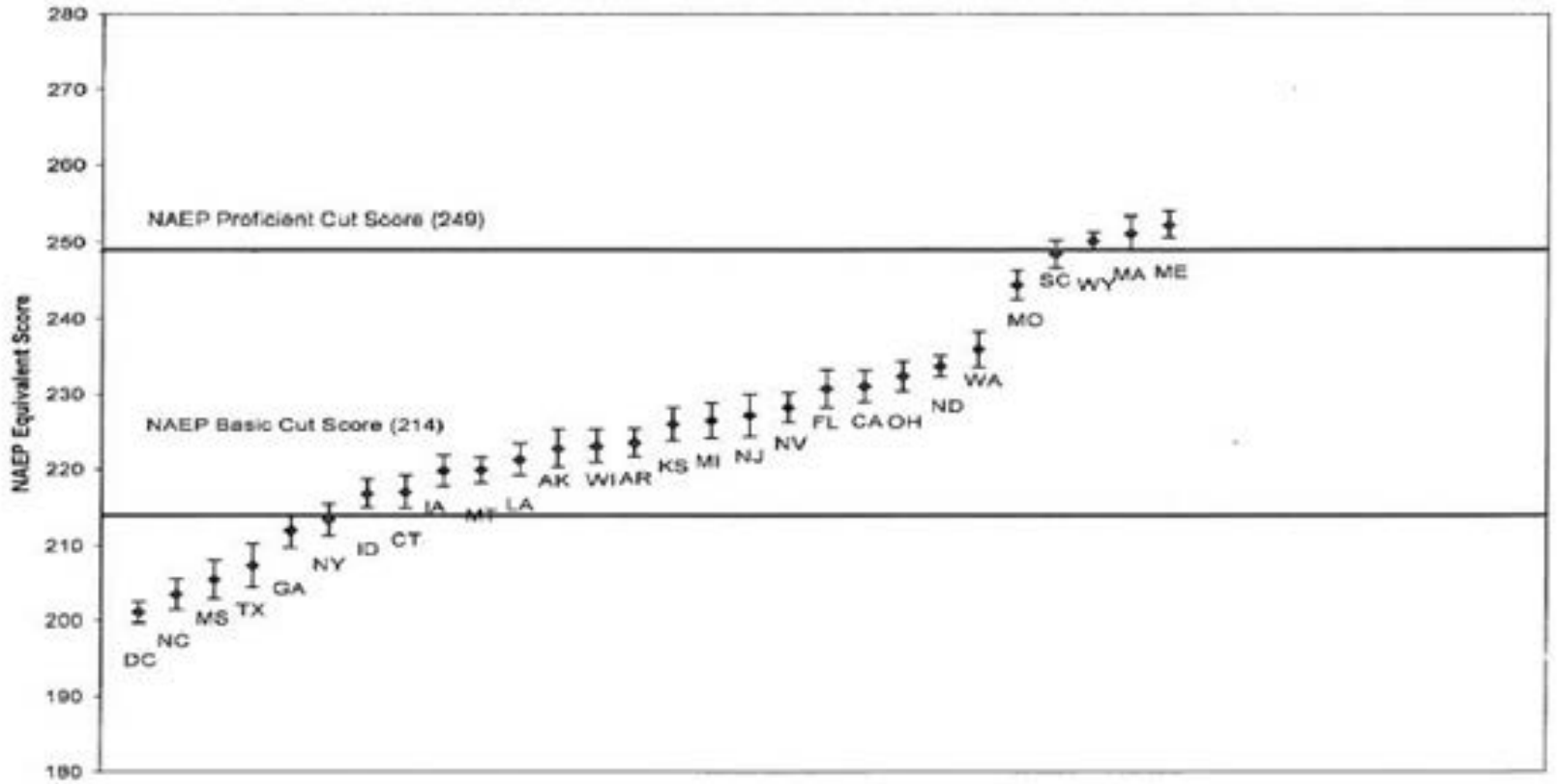
1989 – National Assessment Government Board
*state-level comparisons

1990 – Voluntary National Test
*did not come to fruition

2001 – No Child Left Behind
* standards-based assessments
* consequences
*** states adopted their own standards***

Why did the states decide to work together as a nation?

Figure D-3. NAEP score equivalents of states' proficiency standards for mathematics, grade 4: 2003



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment, and National Longitudinal School-Level State Assessment Score Database (NLSLSASD).

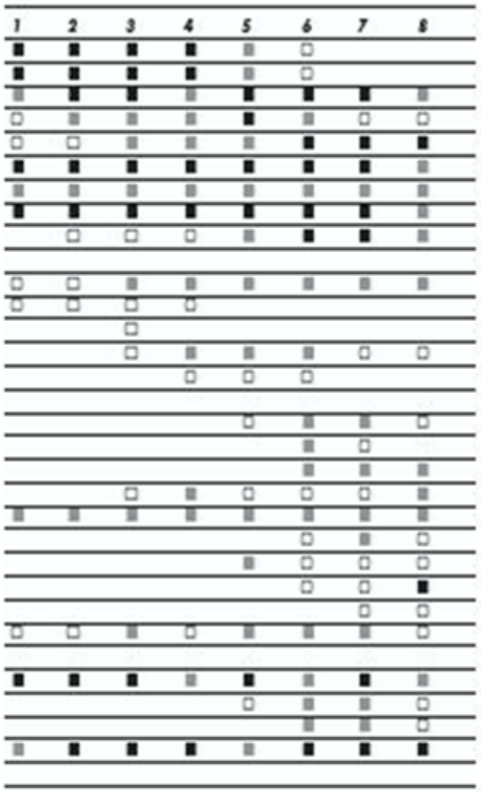
Why work on our US standards?

The shape of math in A+ countries

Mathematics topics intended at each grade by at least two-thirds of A+ countries



Mathematics topics intended at each grade by at least two-thirds of 21 U.S. states



[1] *Schmidt, Houang, & Cogan, "A Coherent Curriculum: The Case of Mathematics." (2002).*

Absolutely!!!

Myths/ Facts: "Are we teaching to the test?"

First → Finally → Then

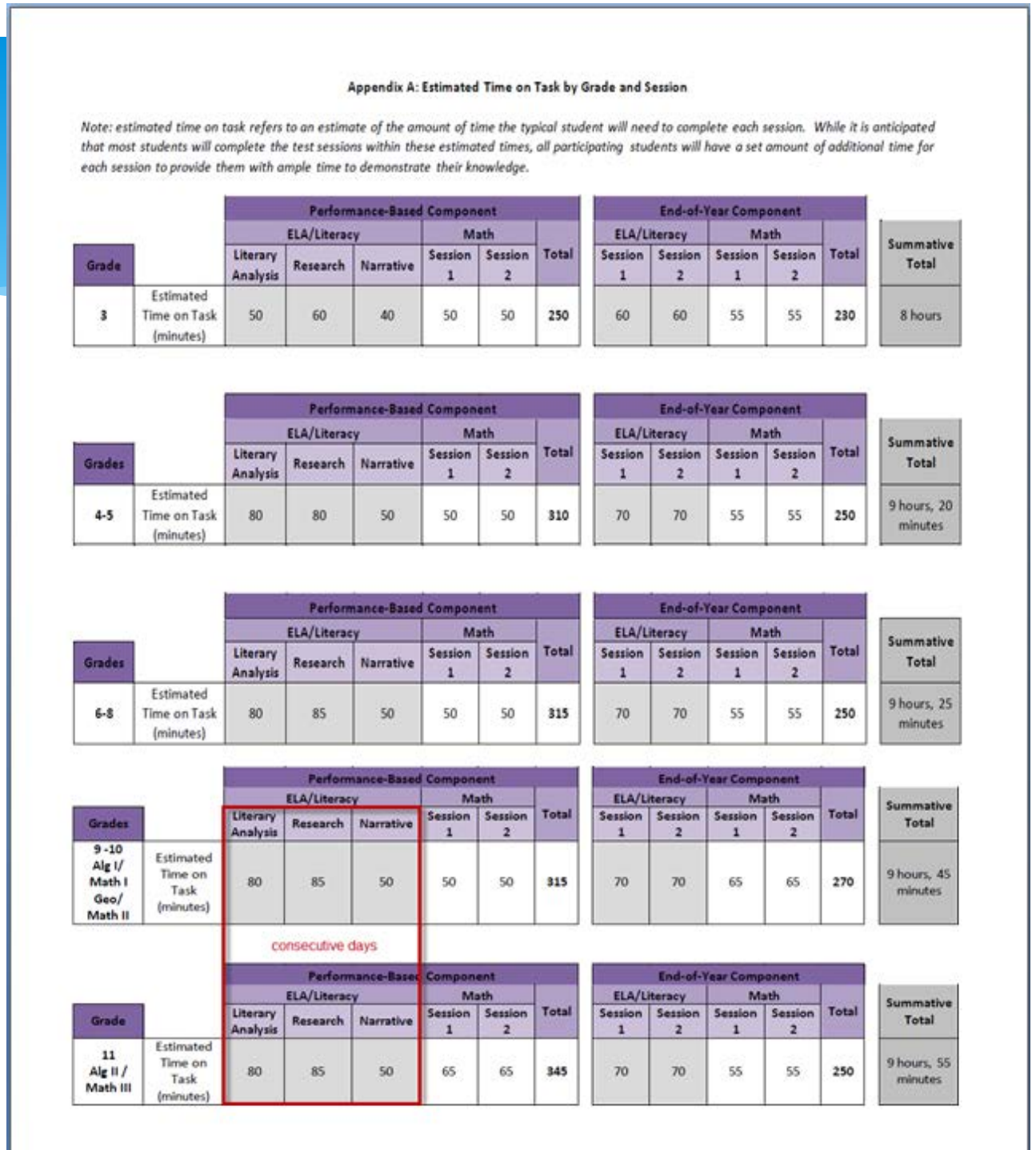
Standards Instruction Assessment

COMMON CORE STATE STANDARDS INITIATIVE
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER

ANNE ARUNDEL COUNTY PUBLIC SCHOOLS

PARCC

Myths/ Facts: How much Testing?



Appendix A: Estimated Time on Task by Grade and Session

Note: estimated time on task refers to an estimate of the amount of time the typical student will need to complete each session. While it is anticipated that most students will complete the test sessions within these estimated times, all participating students will have a set amount of additional time for each session to provide them with ample time to demonstrate their knowledge.

		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math			ELA/Literacy		Math			
Grade		Literary Analysis	Research	Narrative	Session 1	Session 2	Total	Session 1	Session 2	Session 1	Session 2	Total	
3	Estimated Time on Task (minutes)	50	60	40	50	50	250	60	60	55	55	230	8 hours

		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math			ELA/Literacy		Math			
Grades		Literary Analysis	Research	Narrative	Session 1	Session 2	Total	Session 1	Session 2	Session 1	Session 2	Total	
4-5	Estimated Time on Task (minutes)	80	80	50	50	50	310	70	70	55	55	250	9 hours, 20 minutes

		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math			ELA/Literacy		Math			
Grades		Literary Analysis	Research	Narrative	Session 1	Session 2	Total	Session 1	Session 2	Session 1	Session 2	Total	
6-8	Estimated Time on Task (minutes)	80	85	50	50	50	315	70	70	55	55	250	9 hours, 25 minutes

		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math			ELA/Literacy		Math			
Grades		Literary Analysis	Research	Narrative	Session 1	Session 2	Total	Session 1	Session 2	Session 1	Session 2	Total	
9 -10 Alg I/ Math I Geo/ Math II	Estimated Time on Task (minutes)	80	85	50	50	50	315	70	70	65	65	270	9 hours, 45 minutes

consecutive days

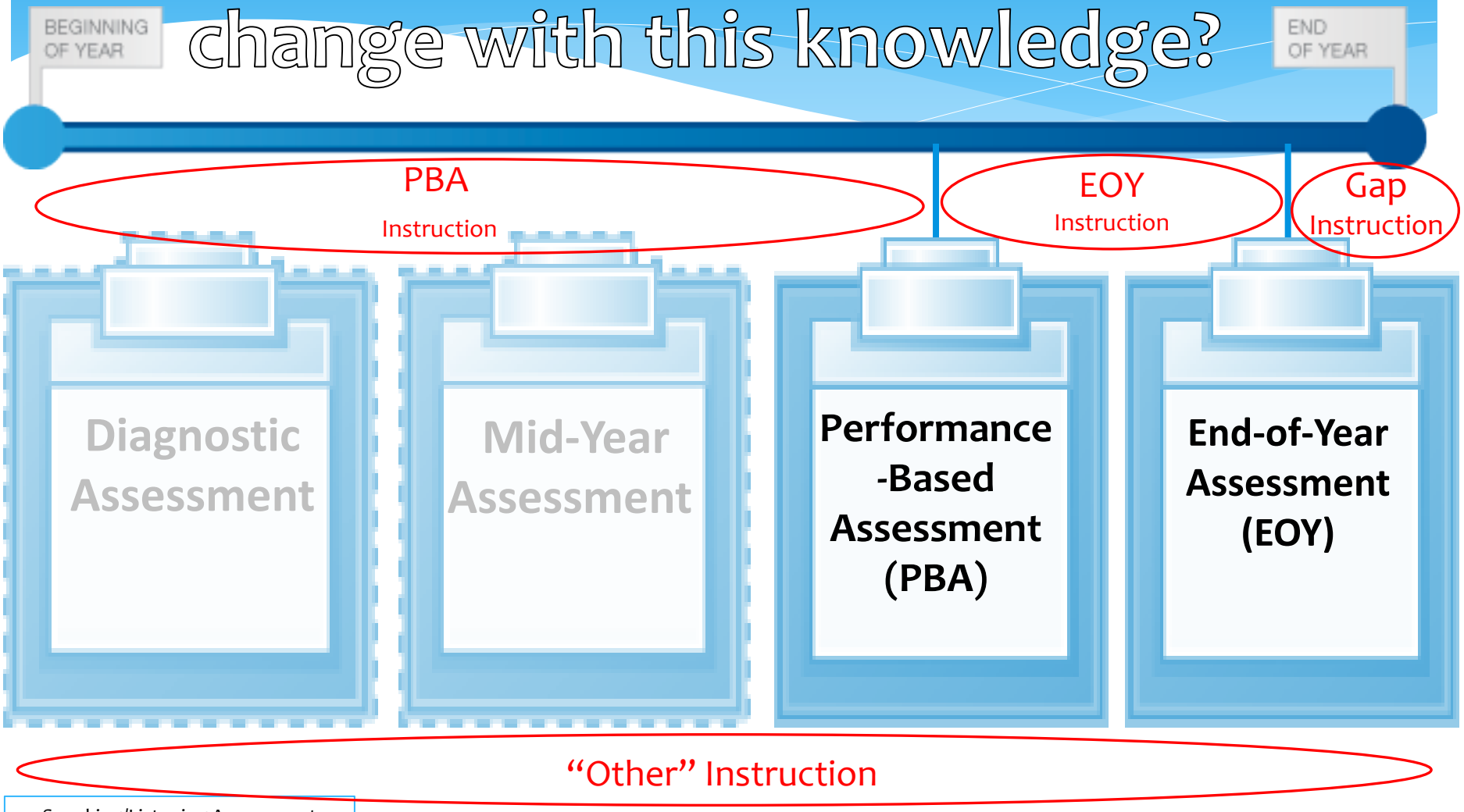
		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math			ELA/Literacy		Math			
Grade		Literary Analysis	Research	Narrative	Session 1	Session 2	Total	Session 1	Session 2	Session 1	Session 2	Total	
11 Alg II / Math III	Estimated Time on Task (minutes)	80	85	50	65	65	345	70	70	55	55	250	9 hours, 55 minutes

Absolutely!!!

Myths/ Facts:

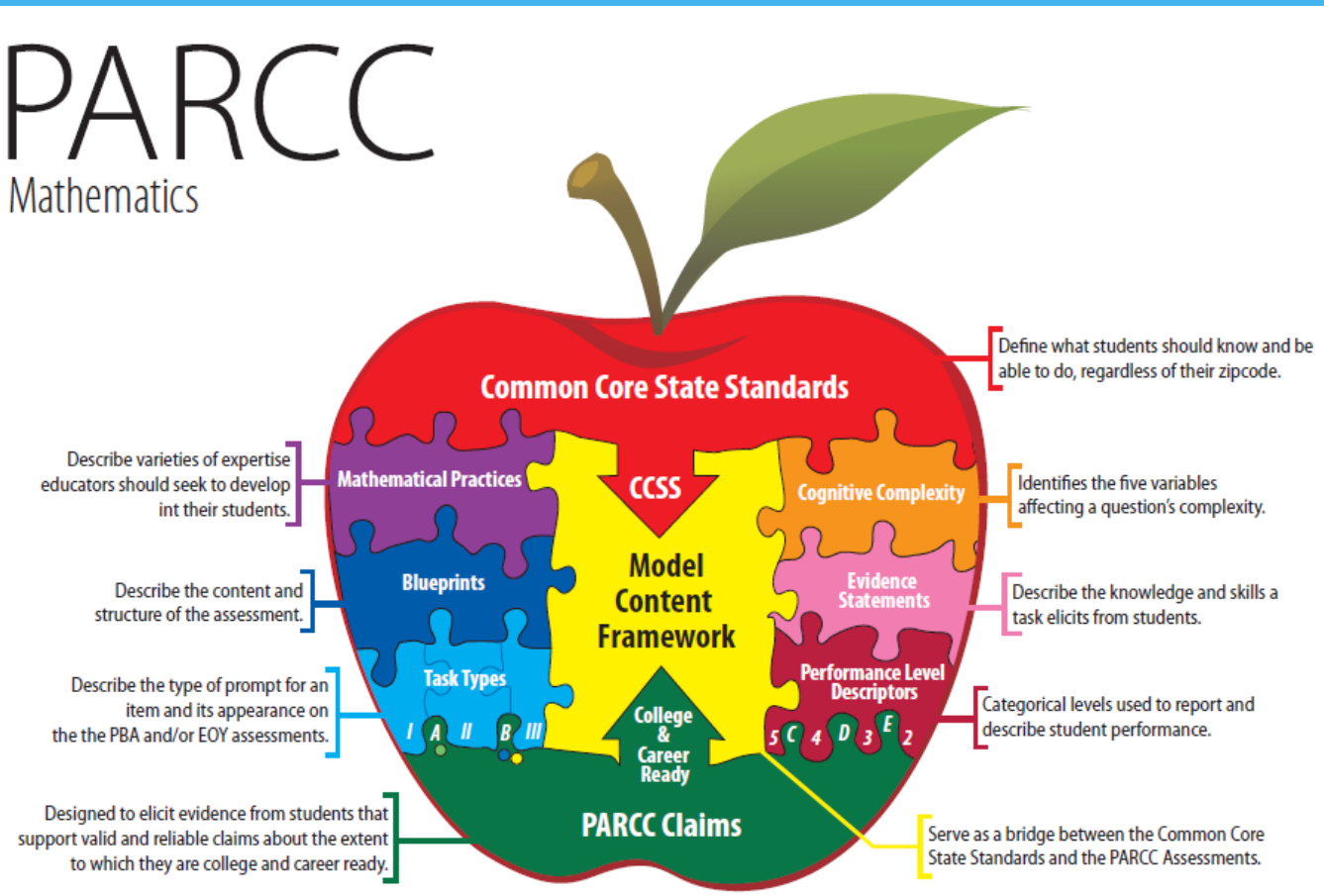
- These tests are harder.
- Kids have to write.
- There are more testing options/accommodations.

How does our local curriculum, instruction, and assessment change with this knowledge?



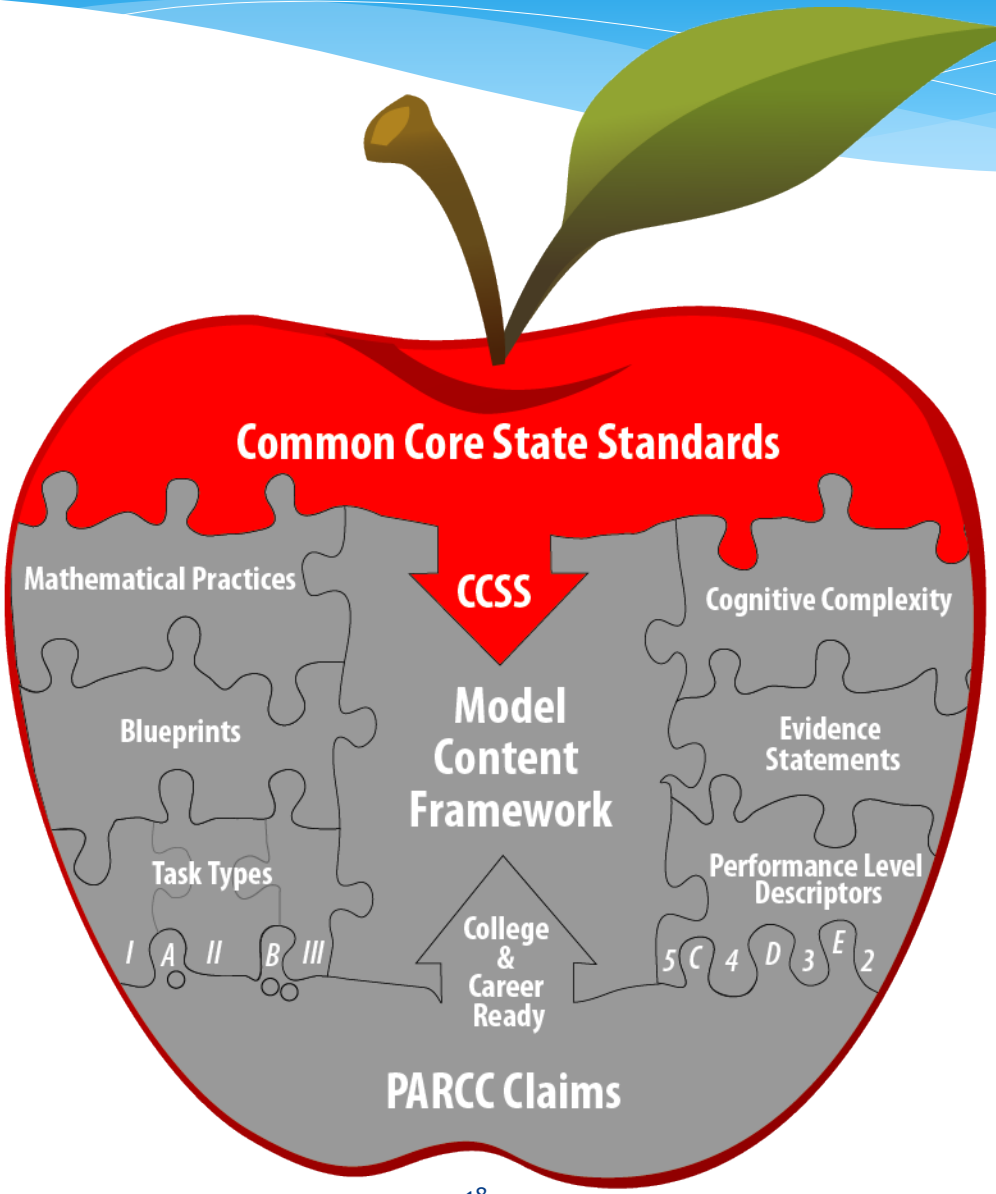
Speaking/Listening Assessment

PARCC in a Puzzle



Partnership for the Assessment of Readiness for College and Careers

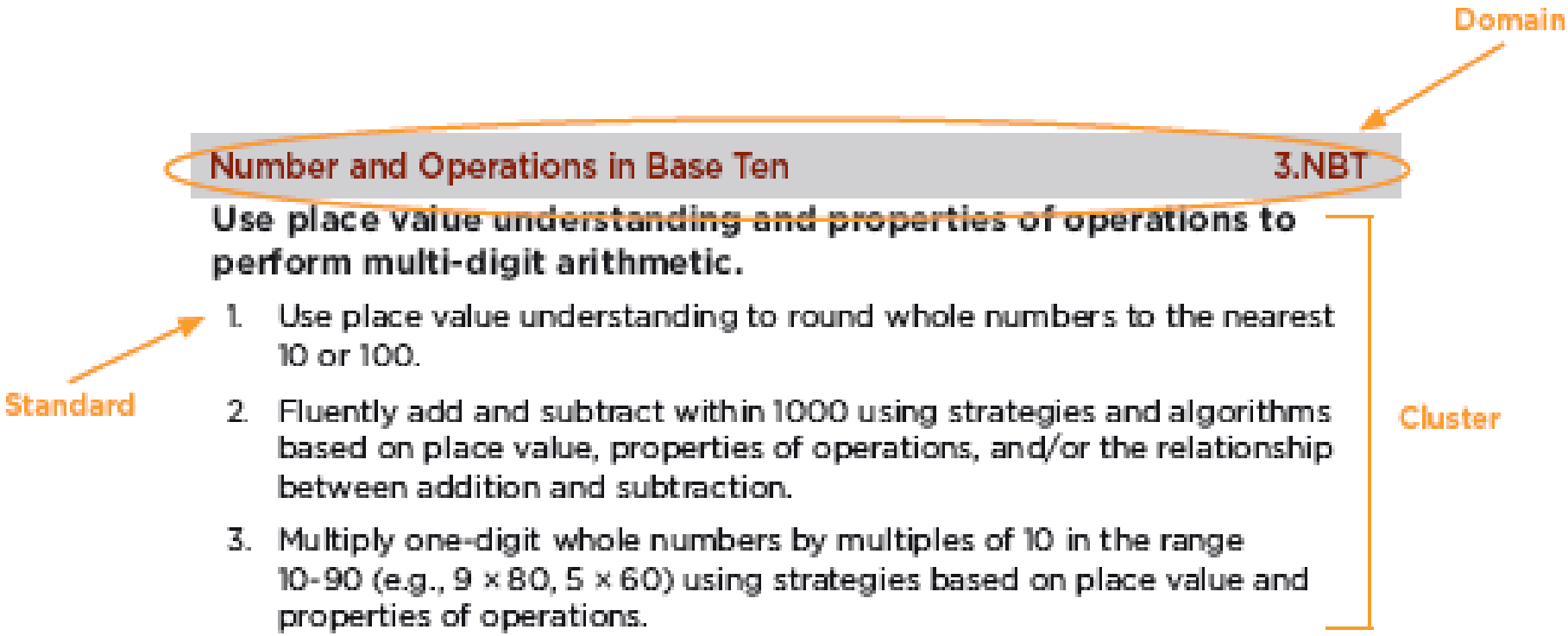
Anne Arundel County Public Schools

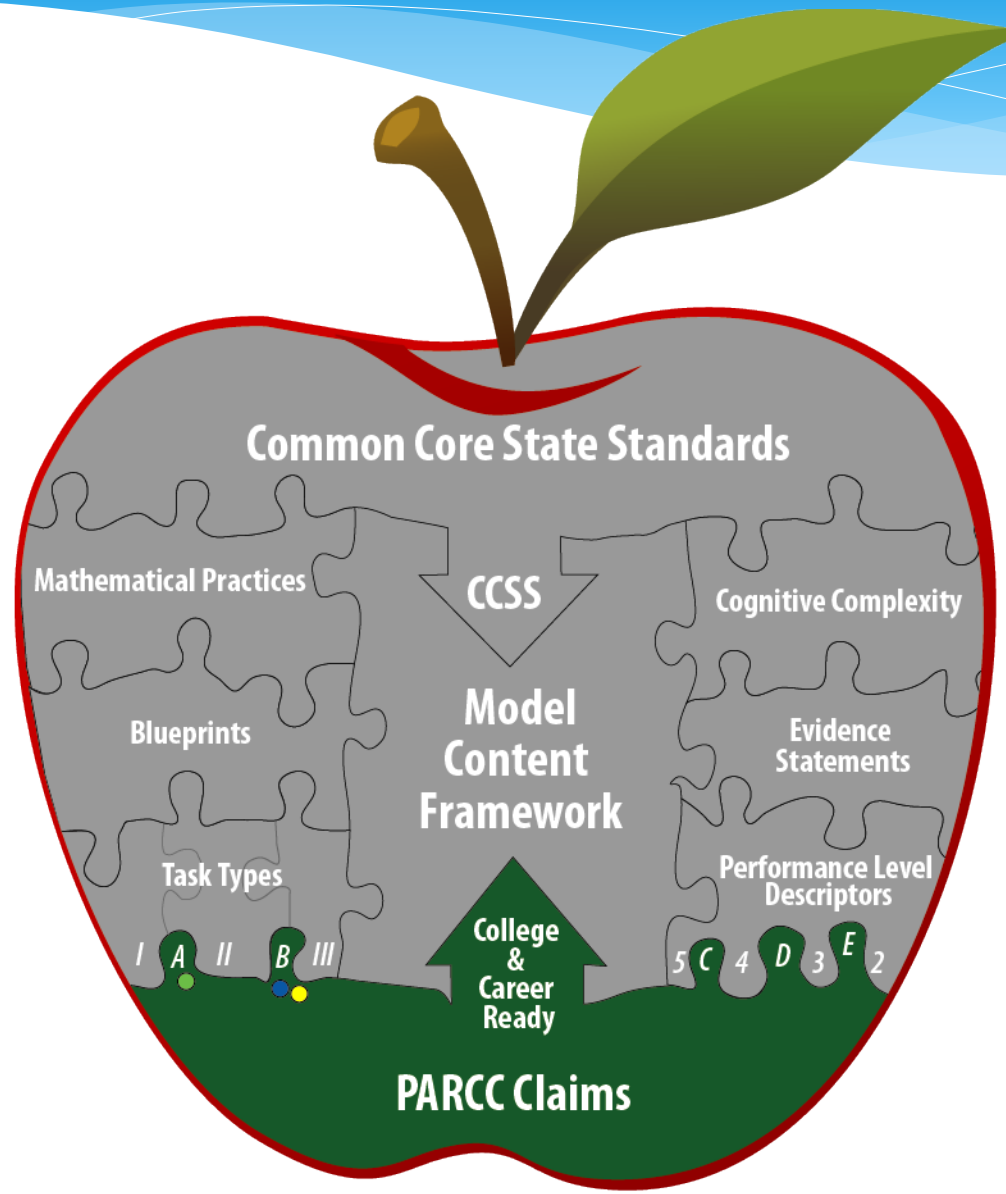

Common Core State Standards
CCSS
Mathematical Practices
Blueprints
Task Types
I A II B III
Model Content Framework
College & Career Ready
Cognitive Complexity
Evidence Statements
Performance Level Descriptors
5 C 4 D 3 E 2
PARCC Claims

Common Core State Standards



Mathematical Standards




Common Core State Standards
Mathematical Practices
CCSS
Cognitive Complexity
Blueprints
Model
Content
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Task Types
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I
A
II
B
III
College
&
Career
Ready
5
C
4
D
3
E
2
PARCC Claims

Claims: Mathematics

Students are on-track or ready for college and careers

Sub-claim A: Students **solve problems involving the major content** for their grade level with connections to practices

~37 pts (3-8),
~42 pts (HS)

Sub-Claim B: Students **solve problems involving the additional and supporting content** for their grade level with connections to practices

~14 pts (3-8),
~23 pts (HS)

Sub-claim C: Students **express mathematical reasoning** by constructing mathematical arguments and critiques

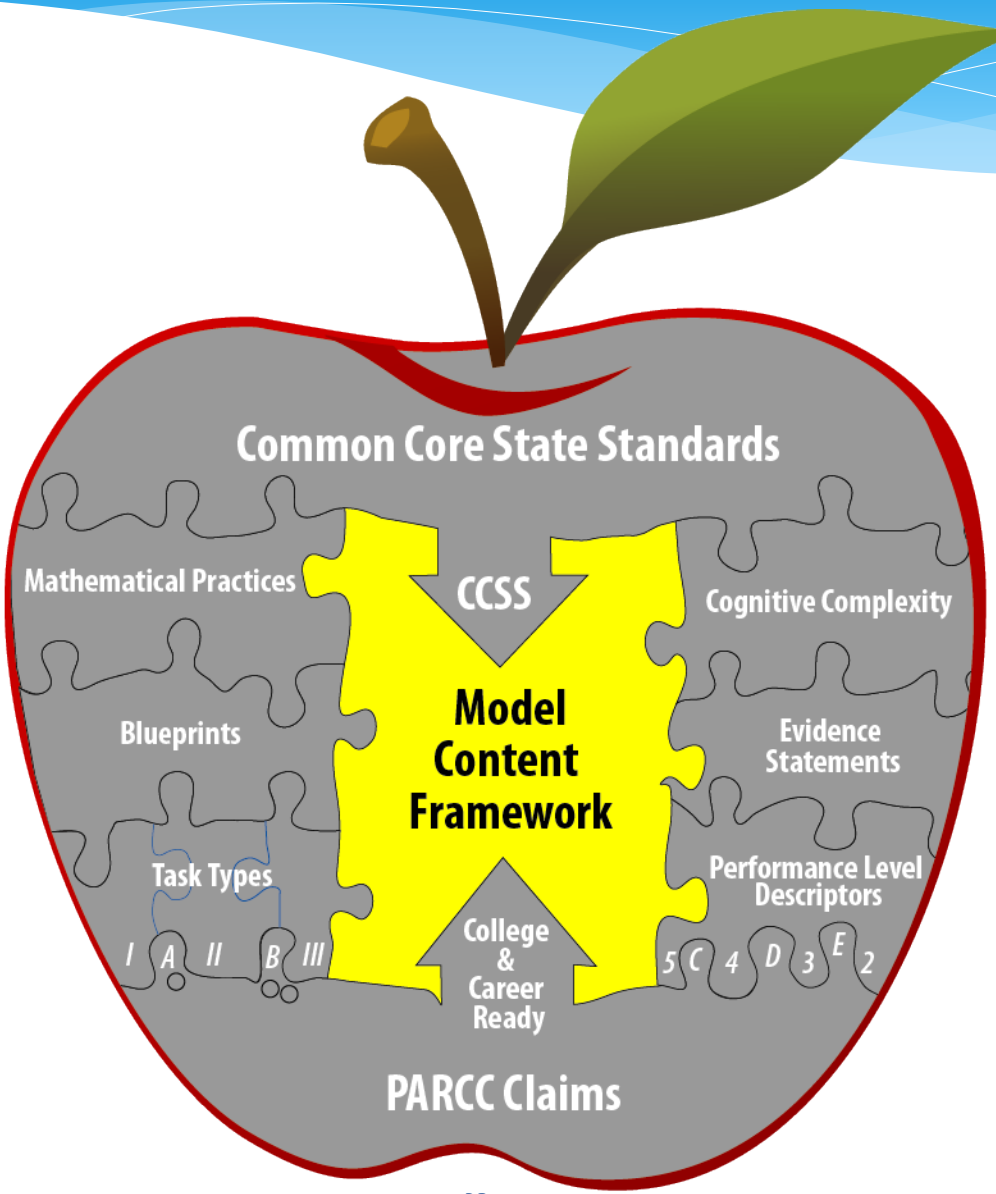
14 pts (3-8),
14 pts (HS)
4 pts (Alg II/Math 3 CCR)

Sub-Claim D: Students solve real world problems engaging particularly in the **modeling practice**

12 pts (3-8),
18 pts (HS)
6 pts (Alg II/Math 3 CCR)

Sub-Claim E: Student **demonstrate fluency** in areas set forth in the Standards for Content in grades 3-6

7-9 pts (3-6)


Common Core State Standards
Mathematical Practices
CCSS
Cognitive Complexity
Blueprints
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Task Types
I A II B III
College & Career Ready
Performance Level Descriptors
5 C 4 D 3 E 2
PARCC Claims

Model Content Framework

Model Content Framework

Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Major Content					
(OA.1–OA.4) Represent and solve problems involving multiplication and division. (OA.5–OA.6)Understand properties of multiplication and the relationship between multiplication and division. (OA.7) Multiply and divide within 100. (OA.8–OA.9)Solve problems involving the four operations, and identify and explain patterns in arithmetic. (3.NF.1–3.NF.3) Develop understanding of fractions as numbers. (3.MD.1-3.MD.2) Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. (3.MD.5-3.MD.7) Geometric measurement: understand concepts of area and relate area to multiplication and addition. **(17 Standards)**	(4.OA.1-4.OA.3) Use the four operations with whole numbers to solve problems. (4.NBT.1-4.NBT.3) Generalize place value understanding for multi-digit whole numbers. (4.NBT.4-4.NBT.6) Use place value understanding and properties of operations to perform multi-digit arithmetic. (4.NF.1-4.NF.2) Extend understanding of fraction equivalence and ordering. (4.NF.3-4.NF.4) Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (4.NF.5-4.NF.7) Understand decimal notation for fractions, and compare decimal fractions. **(16 Standards)**	(5.NBT.1-5.NBT.4) Understand the place value system. (5.NBT.5-5.NBT.7) Perform operations with multi-digit whole numbers and with decimals to hundredths. (5.NF.1-5.NF.2) Use equivalent fractions as a strategy to add and subtract fractions. (5.NF.3-5.NF.7) Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (5.MD.3–5.MD.5) Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. **(17 Standards)**	(6.RP.1– 6.RP.3) Understand ratio concepts and use ratio reasoning to solve problems. (6.NS.1) Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (6.NS.5–6.NS.8) Apply and extend previous understandings of numbers to the system of rational numbers. (6.EE.1–6.EE.4) Apply and extend previous understandings of arithmetic to algebraic expressions. (6.EE.5–6.EE.8) Reason about and solve one-variable equations and inequalities. (6.EE.9) Represent and analyze quantitative relationships between dependent and independent variables. **(17 Standards)**	(7.RP.1–7.RP.3) Analyze proportional relationships and use them to solve real-world and mathematical problems. (7.NS.1–7.NS.3) Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers. (7.EE.1–7.EE.2) Use properties of operations to generate equivalent expressions. (7.EE.3–7.EE.4) Solve real-life and mathematical problems using numerical and algebraic expressions and equations. **(10 Standards)**	(8.EE.1–8.EE.4) Work with radicals and integer exponents. (8.EE.5–8.EE.6) Understand the connections between proportional relationships, lines and linear equations. (8.EE.7–8.EE.8) Analyze and solve linear equations and pairs of simultaneous linear equations. (8.G.1–8.G.5) Understand congruence and similarity using physical models, transparencies or geometry software. (8.G.6–8.G.8) Understand and apply the Pythagorean Theorem. (8.F.1–8.F.3) Define, evaluate and compare functions. **(19 Standards)**
Supporting Content					
(3.MD.3-3.MD4) Represent and interpret data. Geometry (3.G.1-3.G.2) Reason with shapes and their attributes. **(4 Standards)**	(4.OA.4) Gain familiarity with factors and multiples. (4.MD.1-4.MD.3) Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (4.MD.4) Represent and interpret data. **(5 Standards)**	(5.MD.1) Convert like measurement units within a given measurement system. (5.MD.2) Represent and interpret data. **(2 Standards)**	(6.G.1–6.G.4) Solve real-world and mathematical problems involving area, surface area and volume. **(4 Standards)**	(7.SP.1–7.SP.2) Use random sampling to draw inferences about a population. (7.SP.5–7.SP.8) Investigate chance processes and develop, use, and evaluate probability models. **(6 Standards)**	(8.NS.1–8.NS.2) Know that there are numbers that are not rational, and approximate them by rational numbers. (8.F.4–8.F.5) Use functions to model relationships between quantities. (8.SP. 1–8.SP.4) Investigate patterns of association in bivariate data. **(8 Standards)**
Additional Content					
(NBT.1–NBT.3) Use place value understanding and properties of operations to perform multi-digit arithmetic. (3.MD.8) Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. **(4 Standards)**	(4.OA.5) Generate and analyze patterns. (4.MD.5-4.MD.7) Geometric measurement: understand concepts of angle and measure angles. (4.G.1-4.G.3) Draw and identify lines and angles, and classify shapes by properties of their lines and angles. **(7 Standards)**	(5.OA.1-5.OA.2) Write and interpret numerical expressions. (5.OA.3) Analyze patterns and relationships. (5.G.1–5.G.2) Graph points on the coordinate plane to solve real-world and mathematical problems. (5.G.3–5.G.4) Classify two-dimensional figures into categories based on their properties. **(7 Standards)**	(6.NS.2–6.NS.4) Compute fluently with multi-digit numbers and find common factors and multiples. (6.SP.1-6.SP.3)Develop understanding of statistical variability. (6.SP.4-6.SP.5) Summarize and describe distributions. **(8 Standards)**	(7.G.1–7.G.3) Draw, construct and describe geometrical figures and describe the relationships between them. (7.G.4–7.G.6) Solve real-life and mathematical problems involving angle measure, area, surface area and volume. (7.SP. -7.SP.4) Draw informal comparative inferences about two populations. **(8 Standards)**	(8.G.9) Solve real-world and mathematical problems involving volume of cylinders, cones and spheres. **(1 Standard)**

Algebra I MCF

Algebra I Overview

Numerals in parentheses designate individual content standards that are eligible for assessment in whole or in part. Underlined numerals (e.g., 1) indicate standards eligible for assessment on two or more end-of-course assessments. For more information, see Tables 1 and 2. Course emphases are indicated by: ■ Major Content; ◘ Supporting Content; ○ Additional Content. Not all CCSSM content standards in a listed domain or cluster are assessed.

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)

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.

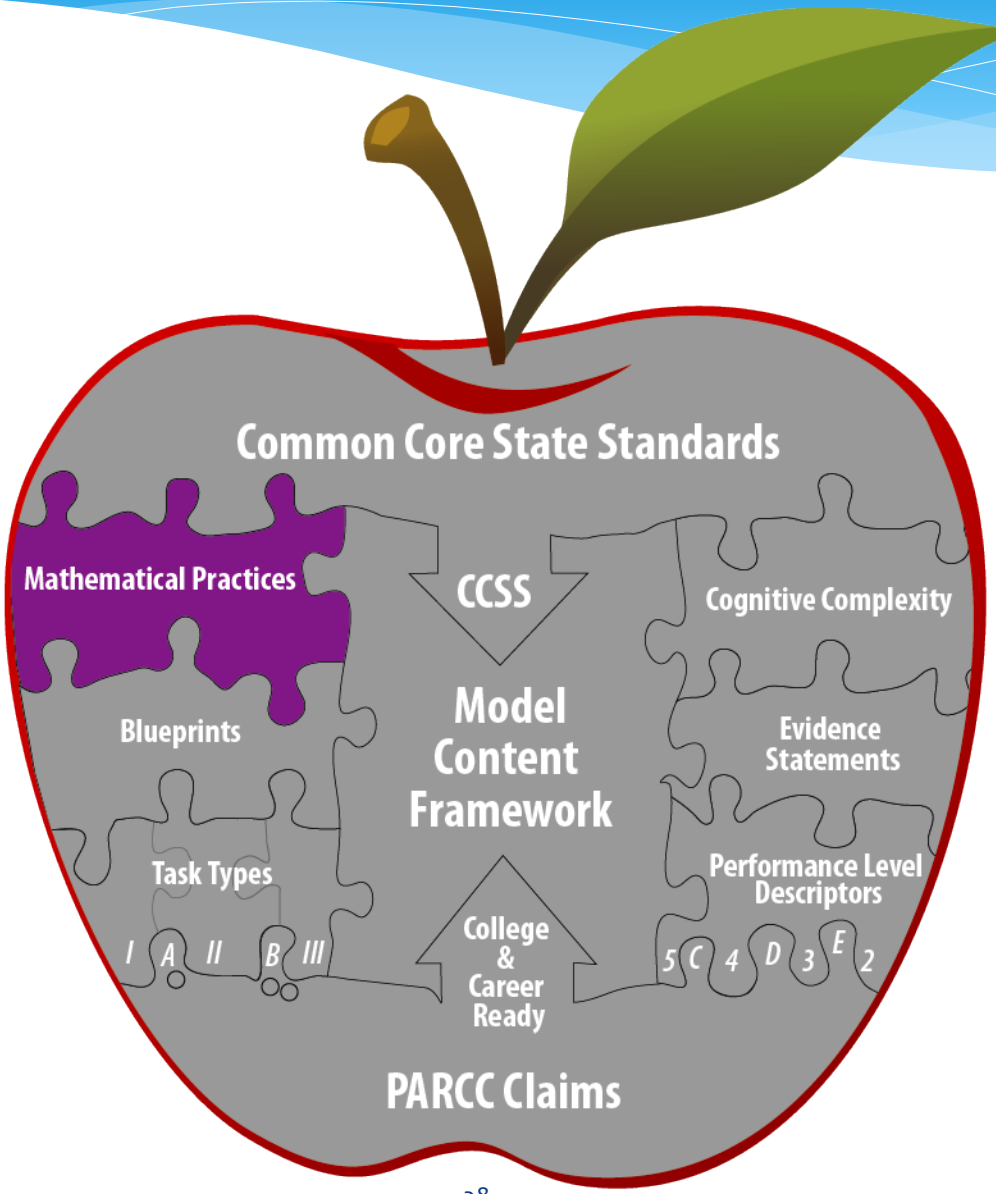
PARCC
Partnership for Assessment of Readiness for College and Careers

Grade 3-8 CCSS by Domain

	Grade 3	Grade 4	Grade 5		Grade 6	Grade 7	Grade 8
(OA) Operations and Algebraic Thinking	(OA.1–OA.4) A. Represent and solve problems involving multiplication and division. (OA.5–OA.6) B. Understand properties of multiplication and the relationship between multiplication and division. (OA.7) C. Multiply and divide within 100. (OA.8–OA.9) D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.	(4.OA.1-4.OA.3) A. Use the four operations with whole numbers to solve problems. (4.OA.4) B. Gain familiarity with factors and multiples. (4.OA.5) C. Generate and analyze patterns.	(5.OA.1-5.OA.2) A. Write and interpret numerical expressions. (5.OA.3) B. Analyze patterns and relationships.	**Ratios and Proportional Reasoning**	(6.RP.1– 6.RP.3) A. Understand ratio concepts and use ratio reasoning to solve problems.	(7.RP.1–7.RP.3) A. Analyze proportional relationships and use them to solve real-world and mathematical problems.	
(NBT) Number and Operations in Base Ten	(NBT.1–NBT.3) A. Use place value understanding and properties of operations to perform multi-digit arithmetic.	(4.NBT.1-4.NBT.3) A. Generalize place value understanding for multi-digit whole numbers. (4.NBT.4-4.NBT.6) B. Use place value understanding and properties of operations to perform multi-digit arithmetic.	(5.NBT.1-5.NBT.4) A. Understand the place value system. (5.NBT.5-5.NBT.7) B. Perform operations with multi-digit whole numbers and with decimals to hundredths.	**The Number System**	(6.NS.1) A. Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (6.NS.2–6.NS.4) B. Compute fluently with multi-digit numbers and find common factors and multiples. (6.NS.5–6.NS.8) C. Apply and extend previous understandings of numbers to the system of rational numbers.	(7.NS.1–7.NS.3) A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.	(8.NS.1–8.NS.2) A. Know that there are numbers that are not rational, and approximate them by rational numbers.
(NF) Number and Operations — Fractions	(3.NF.1–3.NF.3) A. Develop understanding of fractions as numbers.	(4.NF.1-4.NF.2) A. Extend understanding of fraction equivalence and ordering. (4.NF.3-4.NF.4) B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (4.NF.5-4.NF.7) C. Understand decimal notation for fractions, and compare decimal fractions.	(5.NF.1-5.NF.2) A. Use equivalent fractions as a strategy to add and subtract fractions. (5.NF.3-5.NF.7) B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	**Expressions and Equations**	(6.EE.1–6.EE.4) A. Apply and extend previous understandings of arithmetic to algebraic expressions. (6.EE.5–6.EE.8) B. Reason about and solve one-variable equations and inequalities. (6.EE.9) C. Represent and analyze quantitative relationships between dependent and independent variables.	(7.EE.1–7.EE.2) A. Use properties of operations to generate equivalent expressions. (7.EE.3–7.EE.4) B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	(8.EE.1–8.EE.4) A. Work with radicals and integer exponents. (8.EE.5–8.EE.6) B. Understand the connections between proportional relationships, lines and linear equations. (8.EE.7–8.EE.8) C. Analyze and solve linear equations and pairs of simultaneous linear equations.

Grade 3-8 CCSS by Domain

(MD) Measurement and Data	(3.MD.1-3.MD.2) A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. (3.MD.3-3.MD4) B. Represent and interpret data. (3.MD.5-3.MD.7) C. Geometric measurement: understand concepts of area and relate area to multiplication and addition. (3.MD.8) D. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	(4.MD.1-4.MD.3) A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (4.MD.4) B. Represent and interpret data. (4.MD.5-4.MD.7) C. Geometric measurement: understand concepts of angle and measure angles.	(5.MD.1) A. Convert like measurement units within a given measurement system. (5.MD.2) B. Represent and interpret data. (5.MD.3–5.MD.5) C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**Statistics and Probability**	(6.SP.1-6.SP.3) A. Develop understanding of statistical variability. (6.SP.4-6.SP.5) B. Summarize and describe distributions.	(7.SP.1–7.SP.2) A. Use random sampling to draw inferences about a population. (7.SP.3 -7.SP.4) B. Draw informal comparative inferences about two populations. (7.SP.5–7.SP.8) C. Investigate chance processes and develop, use, and evaluate probability models.	(8.SP. 1–8.SP.4) A. Investigate patterns of association in bivariate data.
(G) Geometry	(3.G.1-3.G.2) A. Reason with shapes and their attributes.	(4.G.1-4.G.3) A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	(5.G.1–5.G.2) A. Graph points on the coordinate plane to solve real-world and mathematical problems. (5.G.3–5.G.4) B. Classify two-dimensional figures into categories based on their properties.	**Geometry**	(6.G.1–6.G.4) A. Solve real-world and mathematical problems involving area, surface area and volume.	(7.G.1–7.G.3) A. Draw, construct and describe geometrical figures and describe the relationships between them. (7.G.4–7.G.6) B. Solve real-life and mathematical problems involving angle measure, area, surface area and volume.	(8.G.1–8.G.5) A. Understand congruence and similarity using physical models, transparencies or geometry software. (8.G.6–8.G.8) B. Understand and apply the Pythagorean Theorem. (8.G.9) C. Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.
				Functions			(8.F.1–8.F.3) A. Define, evaluate and compare functions. (8.F.4–8.F.5) B. Use functions to model relationships between quantities.


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Mathematical Practices
CCSS
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5 C 4 D 3 E 2
PARCC Claims

Standards for Mathematical Practices Progression through Grade Levels

Standard for Mathematical Practice 1: Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

Kindergarten	In Kindergarten, students begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" or they may try another strategy.
1st Grade	In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They are willing to try other approaches.
2nd Grade	In second grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. They may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They make conjectures about the solution and plan out a problem-solving approach.
3rd Grade	In third grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Third graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.
4th Grade	In fourth grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Fourth graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They listen to the strategies of others and will try different approaches. They often will use another method to check their

How do you teach good practices?

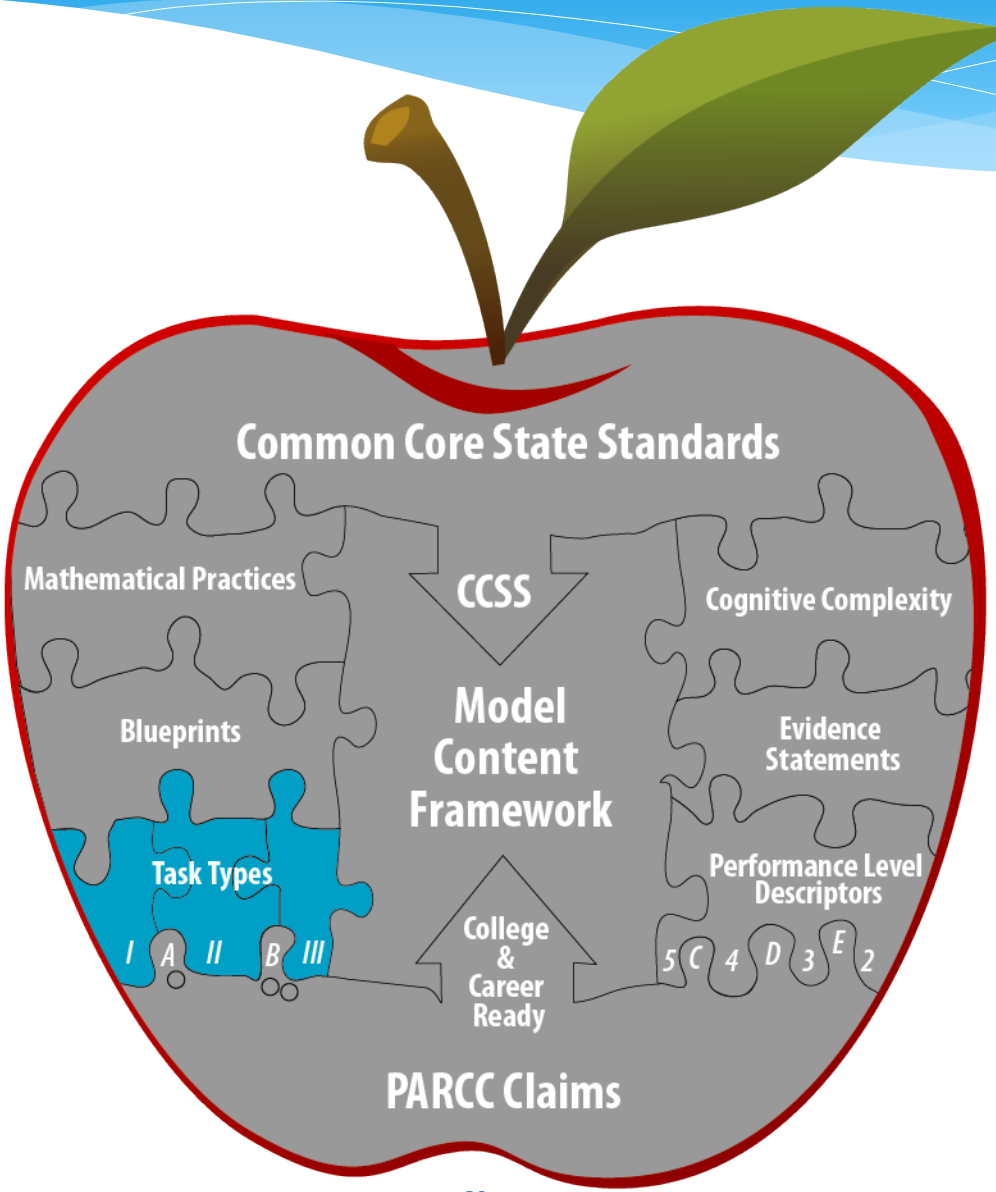
Questions teachers can ask to teach students to have excellent mathematical practices.

Faculty Activity:
Teach MPs in All Subjects

Mathematical Practices

PARCC
Mathematical Practices
Teacher Questions

Mathematical Practice	Questions for Students
1. Make sense of problems and persevere in solving them.	* How do you describe the problem in your own words? * Would it help you to create a diagram, table, or picture?
2. Reason abstractly and quantitatively.	* What does it mean when…? * Could you try this problem with fewer or simpler numbers?
3. Construct viable arguments and critique the reasoning of others.	* What do you think about what your classmate said? * How is your strategy similar to your classmate's strategy?
4. Model with mathematics.	* What number sentence represents your drawing/picture? * How can you use symbols to represent what is happening?
5. Use appropriate tools strategically.	* How did using that tool help solve the problem? * If we did not have that tool, what other tool would we use?
6. Attend to precision.	* Can you tell me why that answer is accurate? * Does your answer make sense?
7. Look for and make use of structures.	* How do you know your rule/calculation will always work?
8. Look for express regularity in repeated reasoning.	* Is there a shortcut/algorithm you could have used?


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Performance Level Descriptors
5 C 4 D 3 E 2
PARCC Claims

Task Types

- The PARCC assessments for mathematics will involve three primary types of tasks: Type I, II, and III.
- Each task type is described on the basis of several factors, principally the purpose of the task in generating evidence for certain sub claims.

Task Type	Description of Task Type
I. Tasks assessing *concepts, skills and procedures*	• Balance of conceptual understanding, fluency, and application • Can involve any or all mathematical practice standards • Machine scorable including innovative, computer-based formats • Will appear on the End of Year and Performance Based Assessment components • Sub-claims A, B and E 
II. Tasks assessing *expressing mathematical reasoning*	• Each task calls for written arguments / justifications, critique of reasoning, or precision in mathematical statements (MP.3, 6). • Can involve other mathematical practice standards • May include a mix of machine scored and hand scored responses • Included on the Performance Based Assessment component • Sub-claim C  (focus)
III. Tasks assessing *modeling / applications*	• Each task calls for modeling/application in a real-world context or scenario (MP.4) • Can involve other mathematical practice standards • May include a mix of machine scored and hand scored responses • Included on the Performance Based Assessment component • Sub-claim D  (focus)

Math: High School Type I Sample Item

- Item has two possible solutions
- Students have to recognize the nature of the equation to know how to solve
- **Technology prevents guessing and working backward**

Solve the following equation:

$$(3x - 2)^2 = 6x - 4.$$

When you are finished, enter the solution(s) below.

Solution 1: $\frac{\square}{\square}$

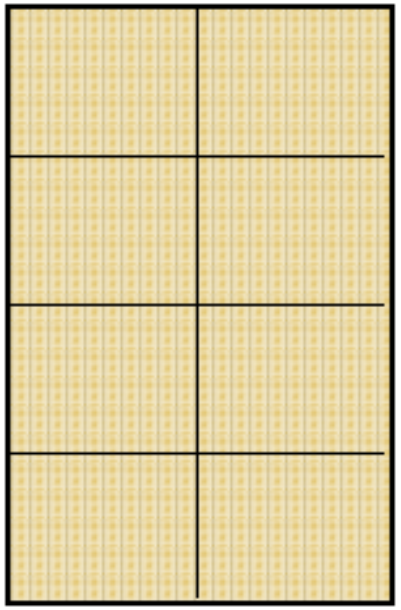
Click + to enter another solution or click Done .

Math: Grade 3 Type II Sample Item

Part A

A farmer plants 3/4 of the field with soybeans.
Drag the soybean to the field as many times as needed to show the fraction of the field that is planted with soybeans.

Farmer's Field





Soybean

Math: Grade 3 Type II Sample Item

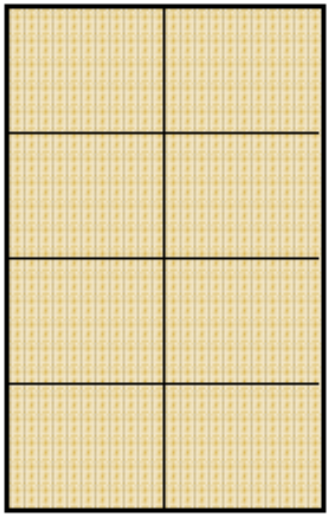
SAMPLE ITEM

Part B

Type a fraction different than 3/4 in the boxes that also represents the fractional part of the farmer's field that is planted with soybeans.

$$\frac{3}{4} = \frac{\square}{\square}$$

Farmer's Field



Reset

Explain why the two fractions above are equal.

* Second part of multi-step problem, and, unlike traditional multiple choice, it is difficult to guess the correct answer or use a choice elimination strategy.

Math: High School Type III Sample Item

- This task is a Type III sample item assessing Mathematical Modeling
- In Part a, students extend a sequence established by the context. This sequence sets up the parts of the task that follow.

Cellular growth

◀ About the task | CCSSM Alignment | **Part a** | Part b | Part c | Part d | Scoring ▶

In a cellular regeneration experiment, Jaydon Laboratory found that for cells put in containers with a particular growth medium, the number of cells at the end of each week was double the number of cells at the end of the previous week.

The data for the first 6 weeks of the experiment are shown in the table. Fill in the blanks to complete the table for weeks 7-10.

Week	Number of cells in medium
1	15
2	30
3	60
4	120
5	240
6	480
7	
8	
9	
10	



Submit Answer

Math: High School Type III Sample Item

* In Part b, students create a recursive expression that can be used to model the sequence of growth; they then consider limitations on the domain to fit the context.

Cellular growth

Assume that as the experiment continues, the number of cells at the end of each week continues to be double the number of cells at the end of the previous week. Let w_n represent the number of cells in the growth medium in week n. Drag the tiles to write a recursive definition for the sequence that represents the number of cells in the growth medium at the end of each week.

Week	Number of cells in medium
1	15
2	30
3	60
4	120
5	240
6	480

an integer	a real number	2	15	30
+	-	•	÷	w_{n-1}
$n \geq 0$	$n \geq 1$	$n \geq 2$	$n \geq 6$	$n \geq 15$

$w_1 =$ [ ]

$w_n =$ [ ] [ ] [ ] ,

where n is [ ] , such that [ ]

Math: High School Type III Sample Item

- In Part c, students choose appropriate statements that could be used to model the situation.
- The use of a multiple-answer, multiple-choice format allows insights into student thinking.

Cellular growth

About the task | CCSSM Alignment | Part a | Part b | **Part c** | Part d | Scoring

Week	Number of cells in medium
1	15
2	30
3	60
4	120
5	240
6	480

Let w_n represent the number of cells in the growth medium at the end of week n. Which of these statements are true about the explicit formula for w_n?

Select all that apply.

- $w_n = 15 + 15 \cdot 2(n - 1)$
- $w_n = 15 + 15 \cdot 2(n)$
- $w_n = 15 \cdot 2^{n-1}$
- $w_n = \frac{1}{2} \cdot 15 \cdot 2^{n-1}$
- $w_n = \frac{1}{2} \cdot 15 \cdot 2^{n}$
- $n \geq 1$, where n is an integer
- $n \geq 1$, where n is a real number
- n can be any real number

Submit Answer

Math: High School Type III Sample Item

* In Part d, students are required to use either the explicit or recursive model they constructed to answer a question about what number of weeks might have resulted in a particular number of cells.

Cellular growth

About the task | CCSSM Alignment | Part a | Part b | Part c | **Part d** | Scoring

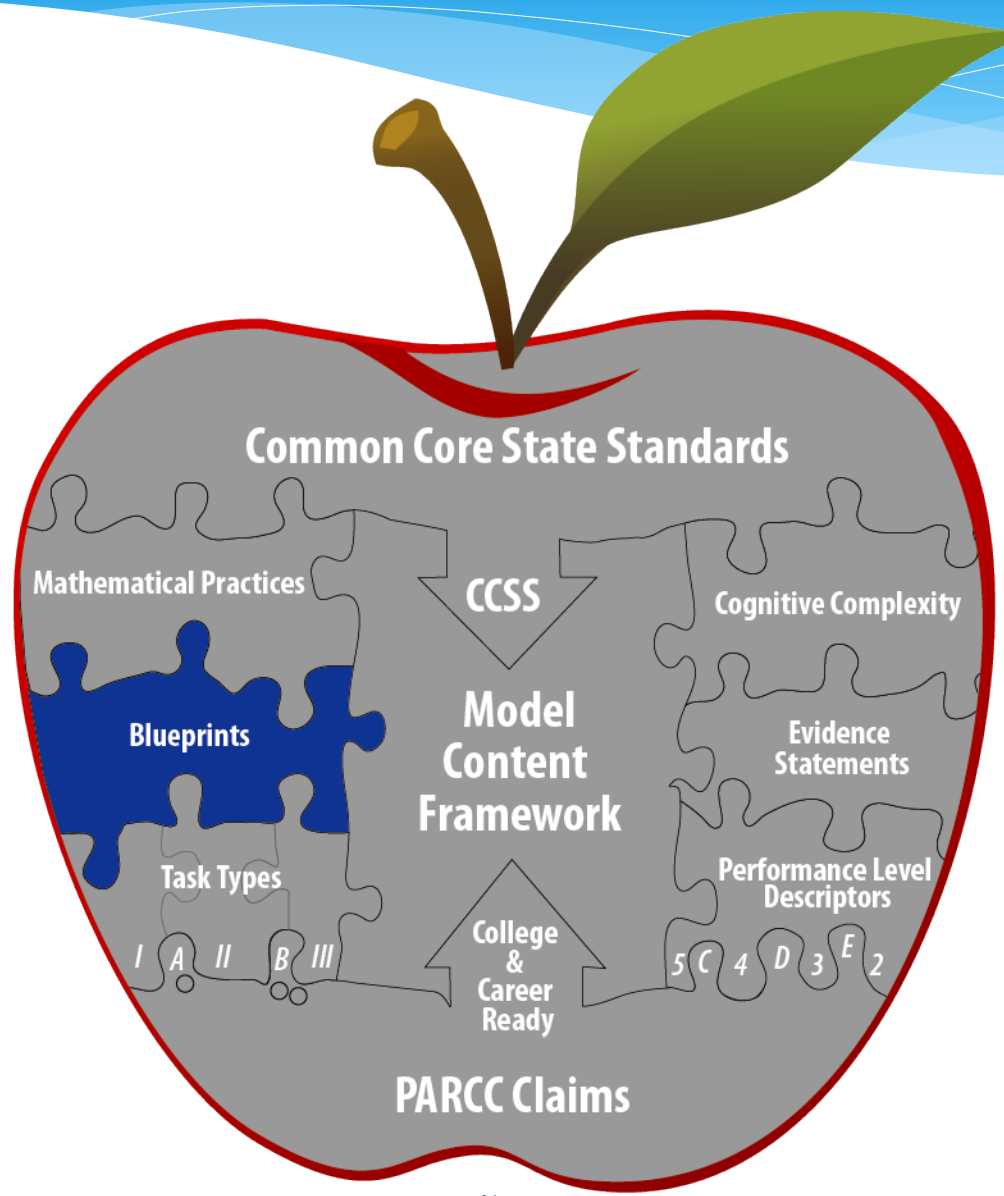
Write your answers to the following problem in your answer booklet.

Consider the table of data about the cellular regeneration experiment.

a. If the number of cells continues to grow according to the pattern shown in the table, at what week number will the number of cells exceed one billion?

b. Explain how the process you used to find the week number relates to either the recursive model or the explicit model you constructed in the previous questions.

Week	Number of cells in medium
1	15
2	30
3	60
4	120
5	240
6	480


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Blueprint

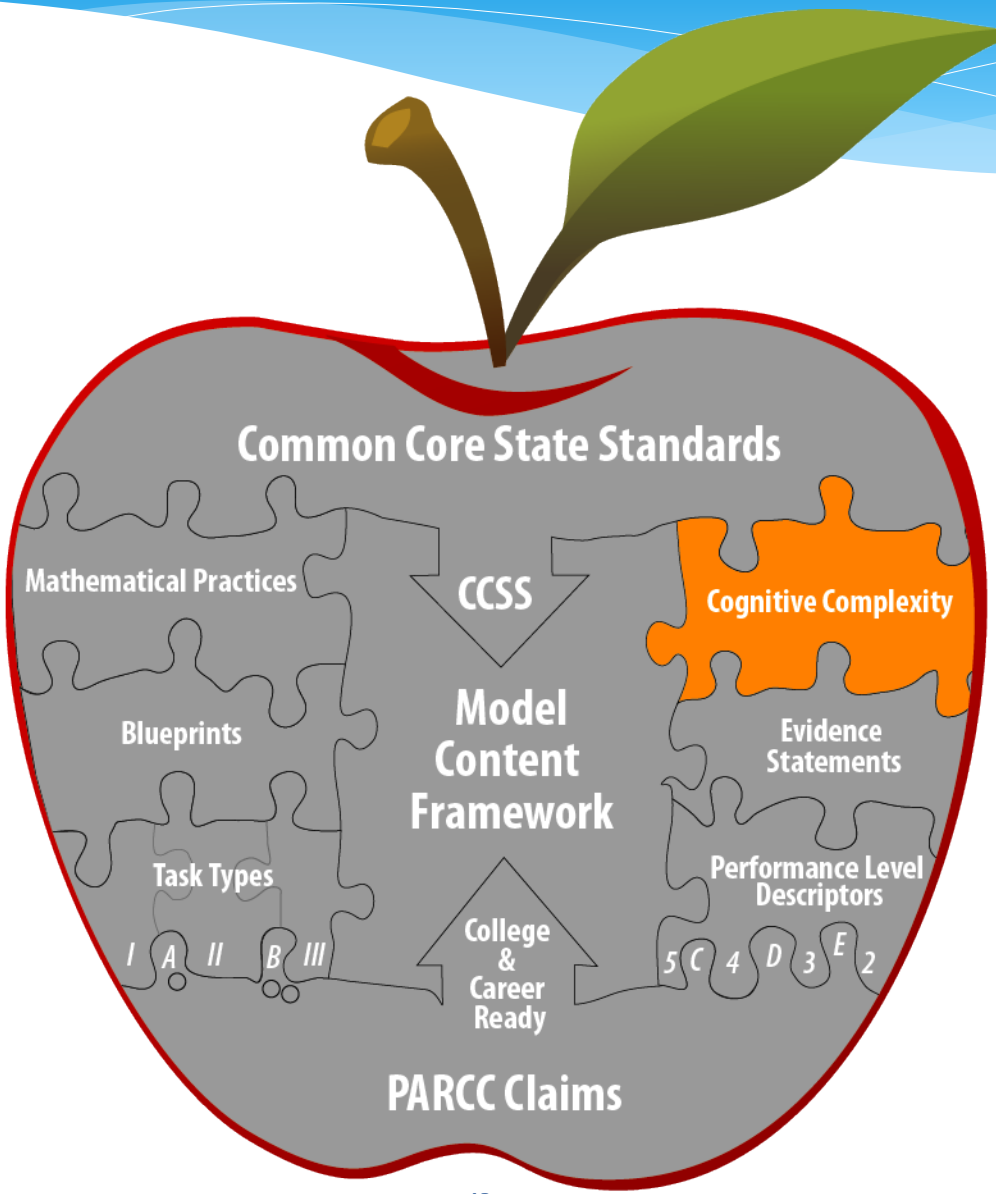
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PARCC High Level Blueprints - Mathematics

Type I – PBA and EOY
Type II – PBA (focus)
Type III – PBA (focus)

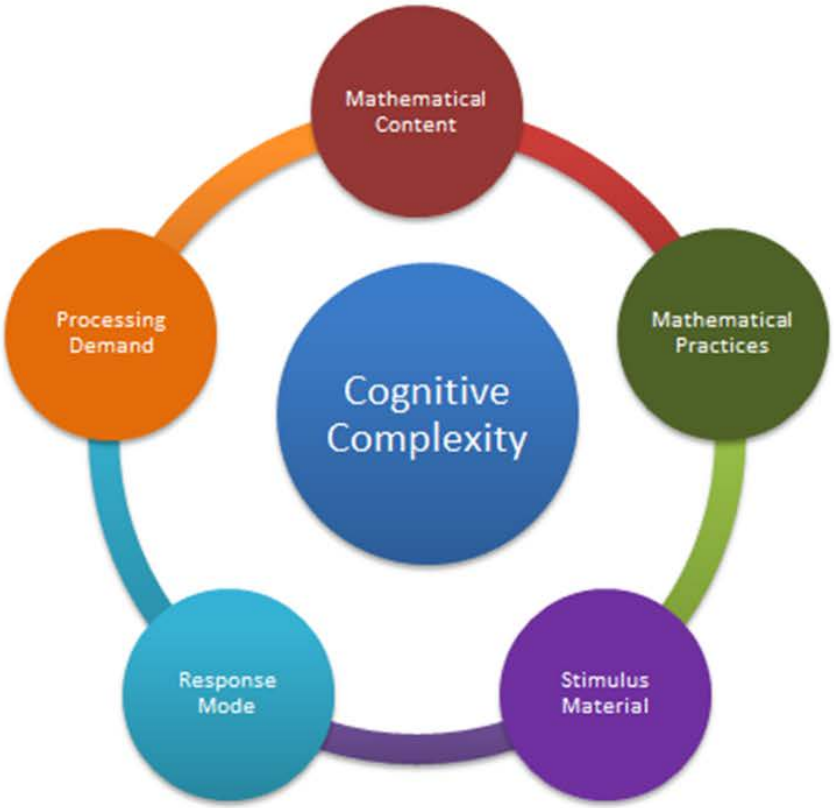
Math item counts per form

Assess-ment	Items	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Algebra I	Math I	Geometry	Math II	Algebra II	Math III
EOY	Type I 1 Point	34	28	28	26	24	26	21	19	19	19	19	19
	Type I 2 Point	5	8	8	7	8	5	11	12	12	12	12	14
	Type I 4 Point	-	-	-	1	1	2	3	3	3	3	3	2
EOY TOTAL	Type I	39	36	36	34	33	33	35	34	34	34	34	35
PBA/MYA	Type I 1Point	8	8	6	8	8	10	10	10	10	10	10	10
	Type I 2 Point	2	2	3	2	2	1	-	-	-	-	-	-
	Type II 3 Point	2	2	2	2	2	2	2	2	2	2	2	2
	Type II 4 Point	2	2	2	2	2	2	2	2	2	2	3	3
	Type III 3 Point	2	2	2	2	2	2	2	2	2	2	2	2
	Type III 6 Point	1	1	1	1	1	1	2	2	2	2	3	3
PBA/MYA TOTAL	Type I	10	10	9	10	10	11	10	10	10	10	10	10
	Type II	4	4	4	4	4	4	4	4	4	4	5	5
	Type III	3	3	3	3	3	3	4	4	4	4	5	5


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Cognitive Complexity: Mathematics

1. Mathematical Content
2. Mathematical Practices
3. Stimulus Material
4. Response Mode
5. Processing Demand

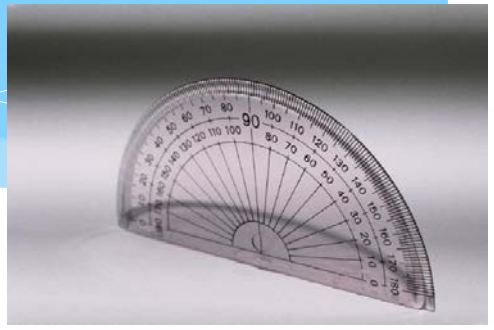


For further reading on the PARCC Cognitive Complexity Framework see, " **Proposed Sources of Cognitive Complexity in PARCC Items and Tasks: Mathematics** " Aug. 31, 2012

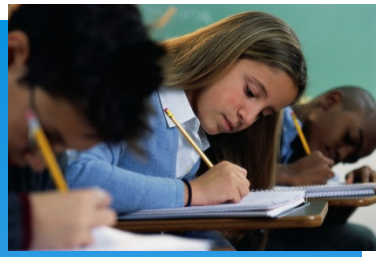
1. Mathematical Content

At each grade level, there is a range in the level of demand in the content standards--from low to moderate to high complexity. Within Mathematical Content, complexity is affected by:

* Numbers: Whole numbers vs. fractions
* Expressions and Equations: The types of numbers or operations in an expression or equation (3/7, √)
* Diagrams, graphs, or other concrete representations: may contribute to greater overall complexity than simpler graphs such as scatterplots.
* Problem structures: Word problems with underlying algebraic structures vs. word problems with underlying arithmetic structures.



2. Mathematical Practices



MPs involve what students are asked to do with mathematical content, such as engage in application and analysis of the content. The actions that students perform on mathematical objects also contribute to Mathematical Practices complexity.

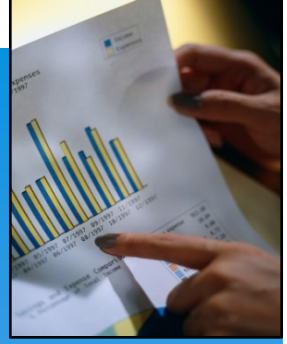
Low Complexity

* Items at this level primarily involve recalling or recognizing concepts or procedures specified in the Standards.

High Complexity

* High complexity items make heavy demands on students, because students are expected to use reasoning, planning, synthesis, analysis, judgment, and creative thought. They may be expected to justify mathematical statements or construct a formal mathematical argument.

3. Stimulus Material



This dimension of cognitive complexity accounts for the number of different pieces of stimulus material in an item, as well as the role of technology tools in the item.

Low Complexity

* Low complexity involves a single piece of (or no) stimulus material (e.g., table, graph, figure, etc.) OR single online tool (generally, incremental technology)

High Complexity

* High complexity involves two pieces of stimulus material with online tool(s) OR three pieces of stimulus material with or without online tools.

4. Response Mode

The way in which examinees are required to complete assessment activities influences an item's cognitive complexity.

* **Low cognitive complexity** response modes in mathematics involve primarily selecting responses and producing short responses, rather than generating more extended responses.

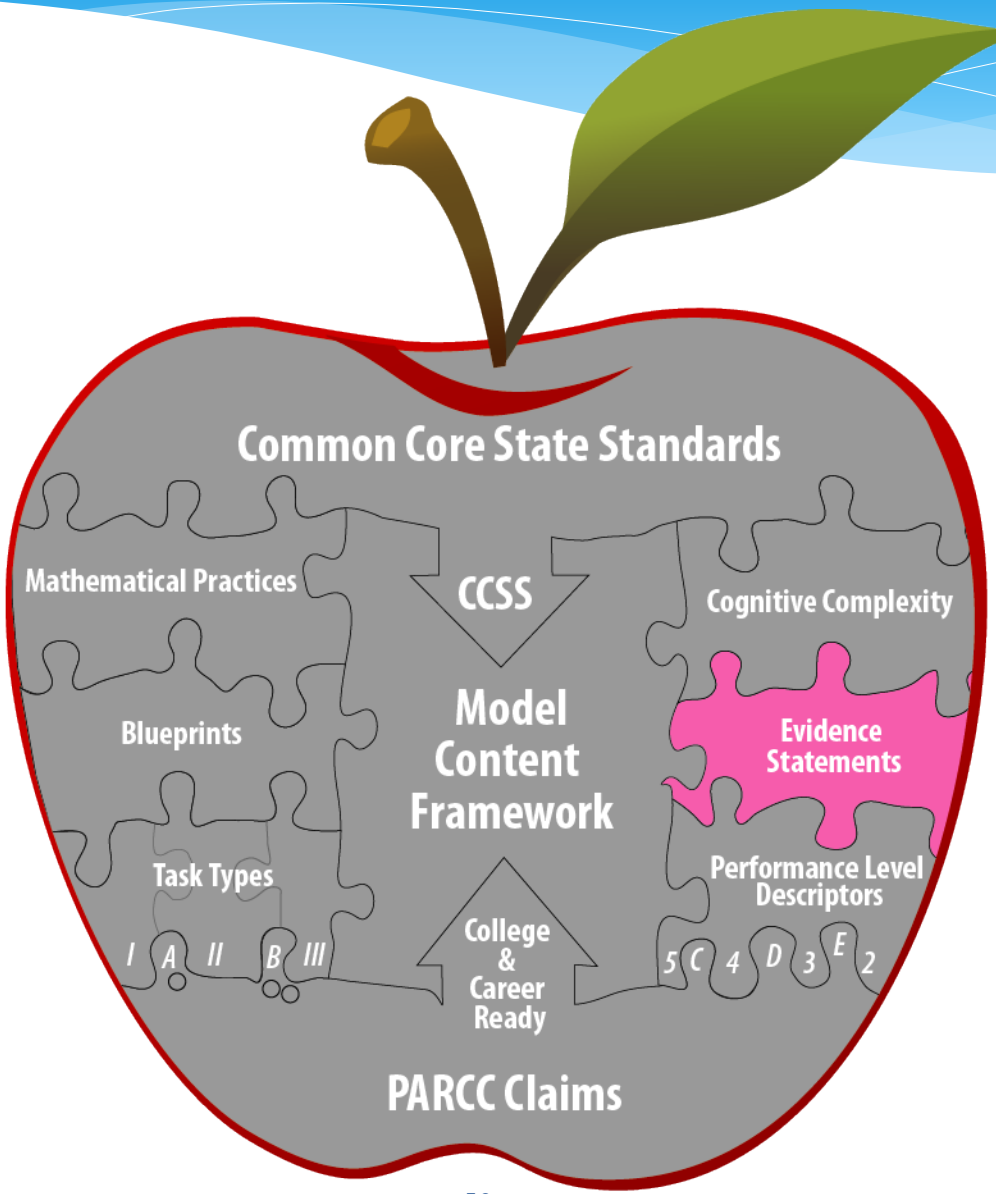
* **High Complexity** response modes require students to construct extended written responses that may also incorporate the use of online tools such as an equation editor, graphing tool, or other online feature that is essential to responding.



5. Processing Demand

Reading load and linguistic demands in item stems, instructions for responding to an item, and response options contribute to the cognitive complexity of items.



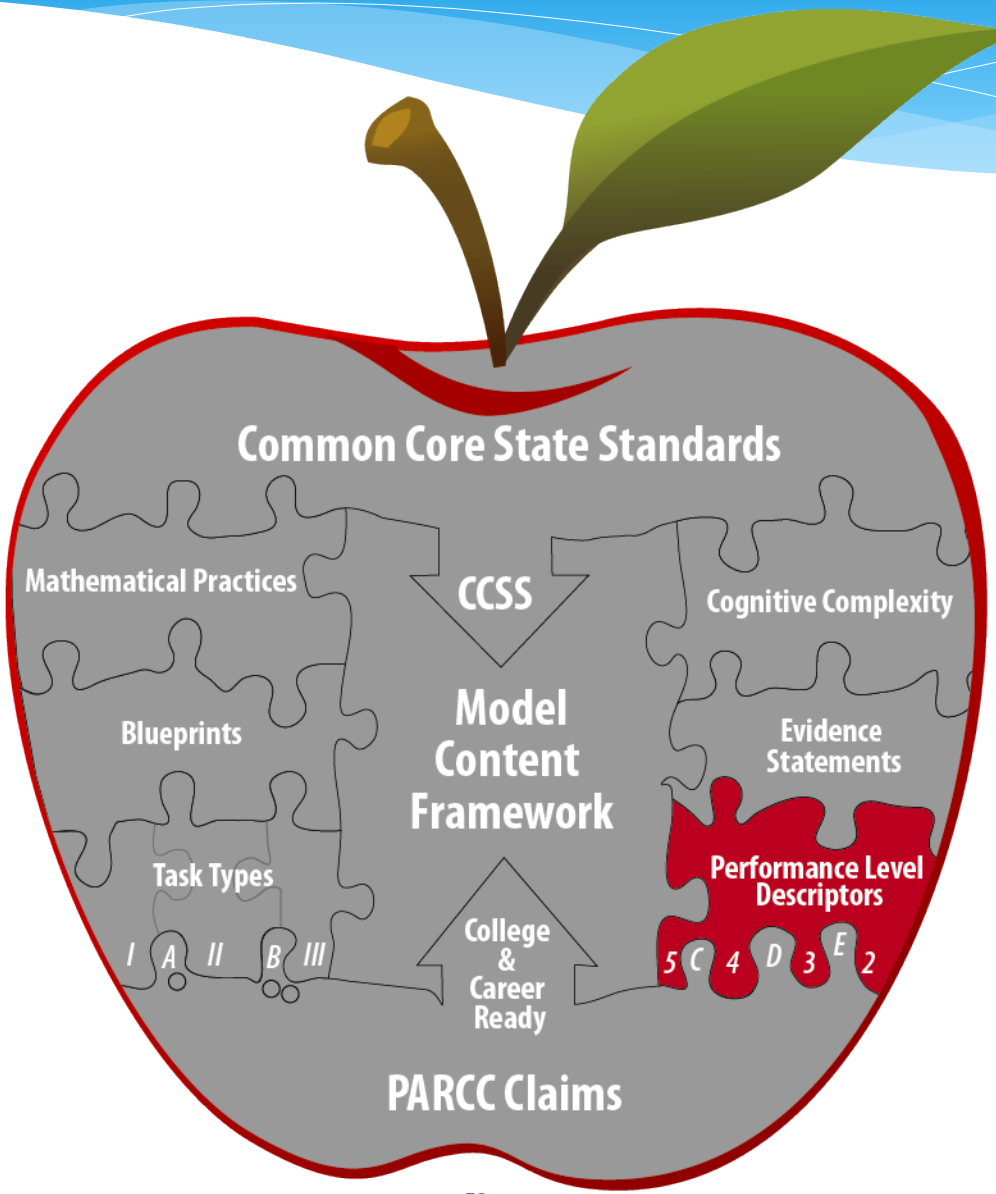

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Evidence Statements

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Grade 8 PBA/MYA

Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = \frac{1}{3^3} = \frac{1}{27}$.	i) Tasks do not have a context. ii) Tasks center on the properties and equivalence, not on simplification. For example, a task might ask a student to classify expressions according to whether or not they are equivalent to a given expression. iii) 50% of expressions should involve one property iv) 30% of expressions should involve two properties v) 20% of expressions should involve three properties vi) Tasks should involve a single common base	7	No
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example estimate the population of the United States as* 3×10^8 *and the population of the world as* 7×10^9*, and determine that the world population is more than 20 times larger.*	None	4	No
8.EE.4-1	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	i) Tasks have "thin context" or no context. ii) Rules or conventions for significant figures are not assessed. iii) 20% of tasks involve both decimal and scientific notation, e.g., write $120 + 3 \times 10^4$ in scientific notation.	6, 7, 8	No


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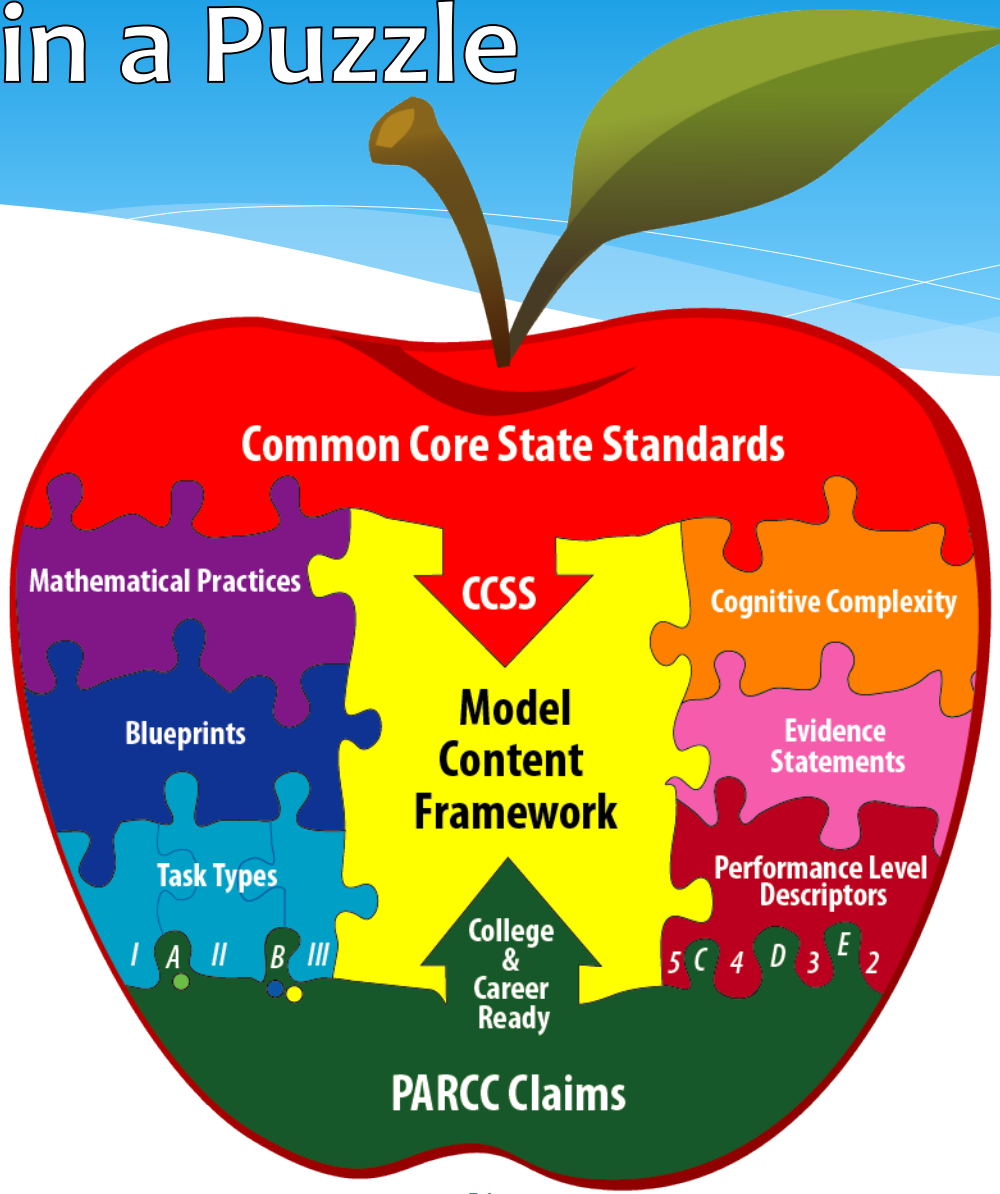
Performance Level Descriptors

Performance Level Descriptors – Algebra II

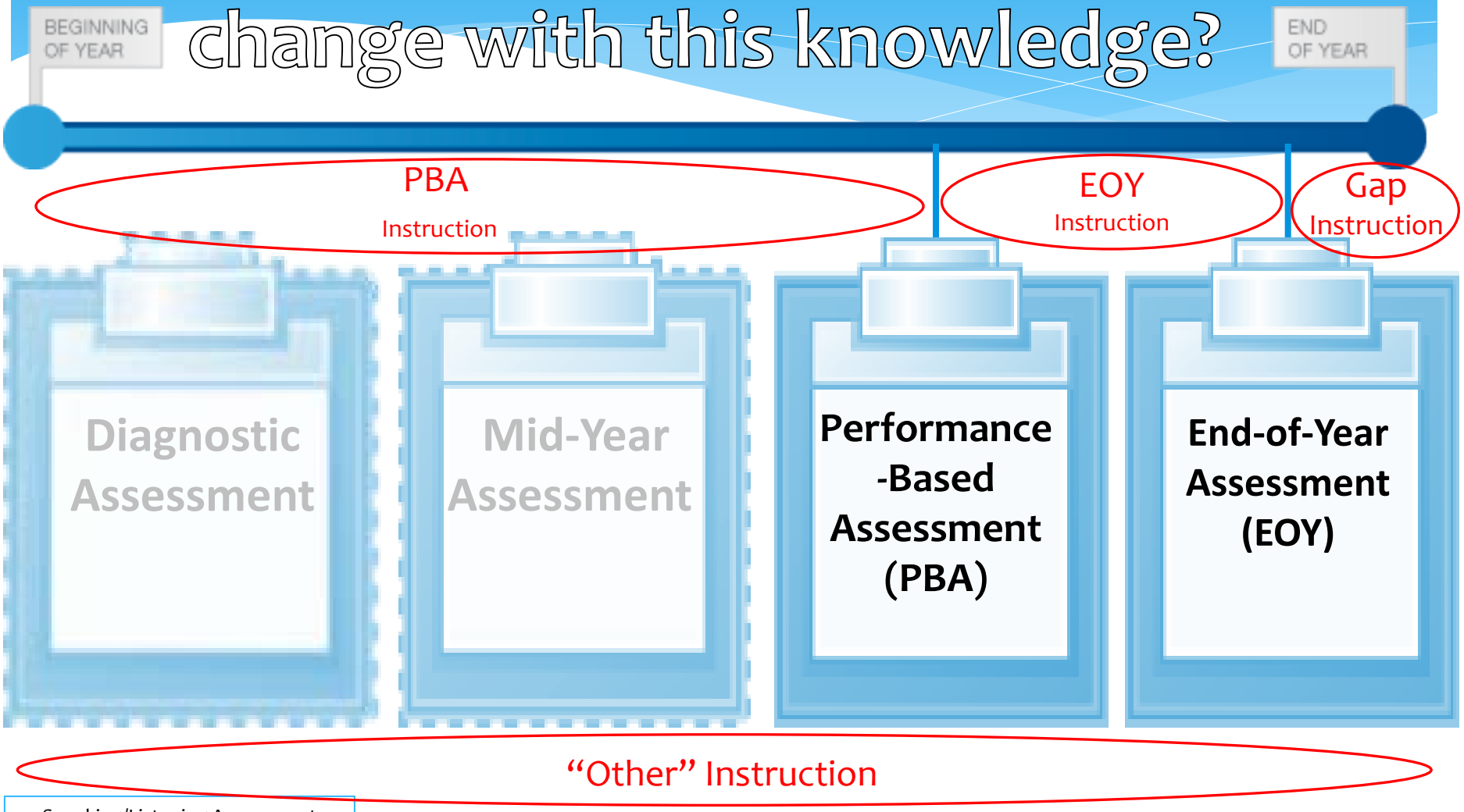
	Algebra II: Sub-Claim A The student solves problems involving the Major Content for the grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	**Level 4: Strong Command**	**Level 3: Moderate Command**	**Level 2: Partial Command**
Rate of Change F-IF.6-2 F-IF.6-7	Calculates and interprets the average rate of change of polynomial, exponential, logarithmic or trigonometric functions (presented symbolically or as a table) over a specified interval, and estimates the rate of change from a graph. **Compares rates of change associated with different intervals.**	Calculates and interprets the average rate of change of polynomial, exponential, **logarithmic or trigonometric functions** (presented symbolically or as a table) over a specified interval, and estimates the rate of change from a graph.	Calculates the average rate of change of polynomial and exponential functions (presented symbolically or as a table) over a specified interval, **and estimates the rate of change from a graph.**	Calculates the average rate of change of polynomial and exponential functions (presented symbolically or as a table) over a specified interval.

"College and Career Ready"

PARCC in a Puzzle



How does our local curriculum, instruction, and assessment change with this knowledge?



Speaking/Listening Assessment

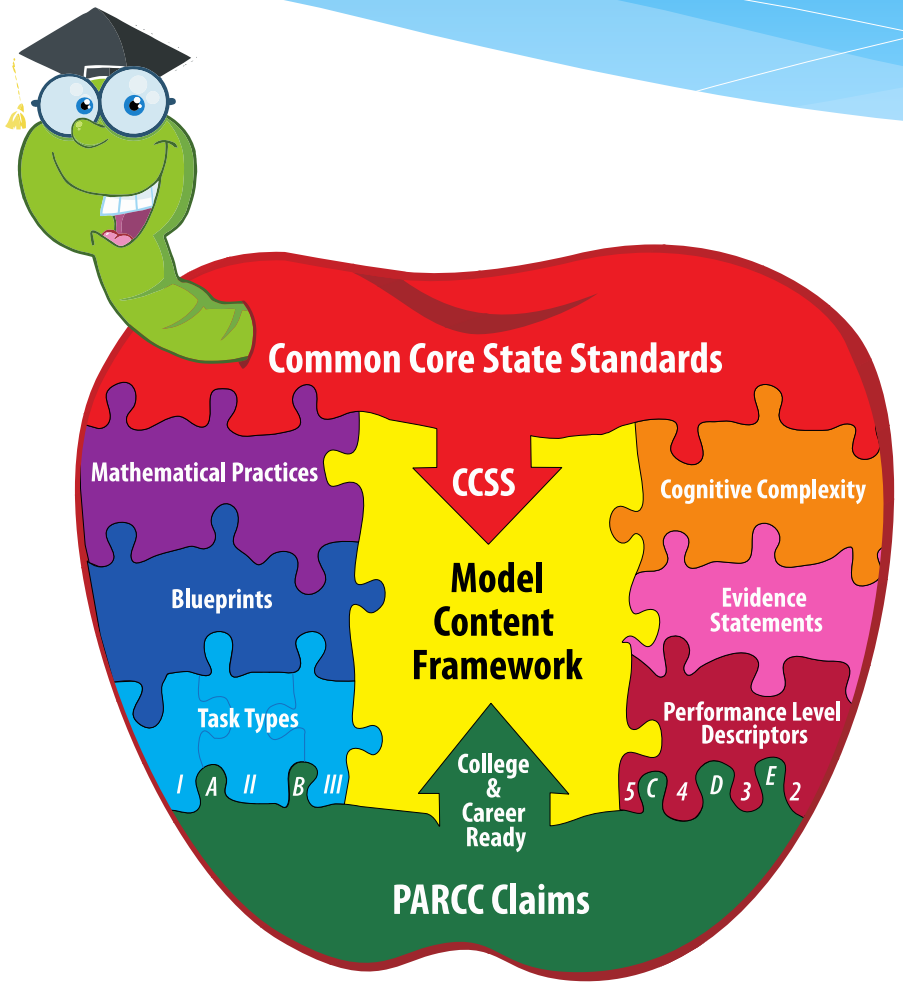
Jigsaw Activity!!!



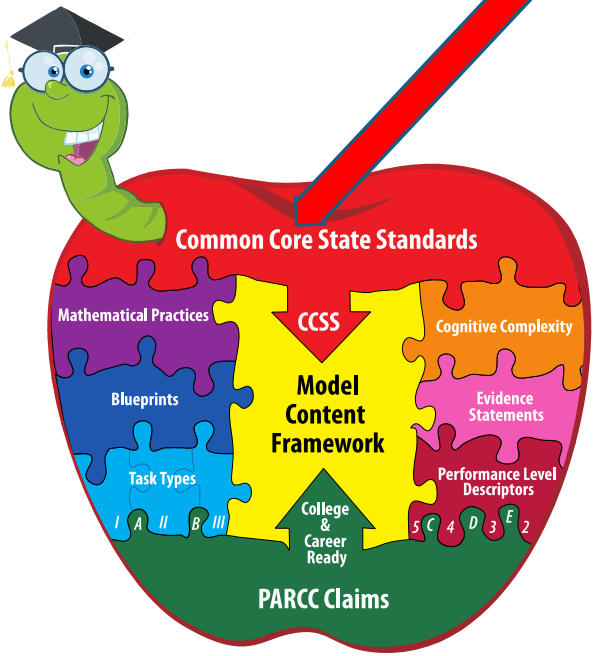
How does all of this affect my work?



Worm the Apple!



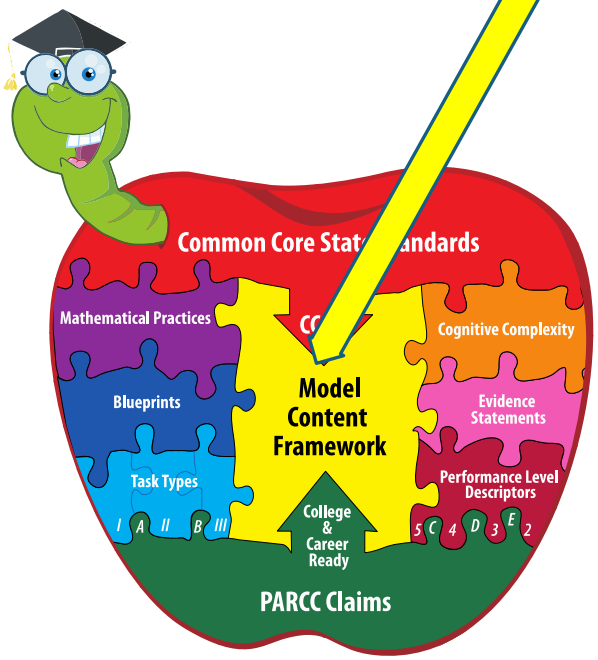
1. Pick a standard!!!



CCSS Math 5 NF B 7 C

Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally?*

2. Determine its color in the MCF.

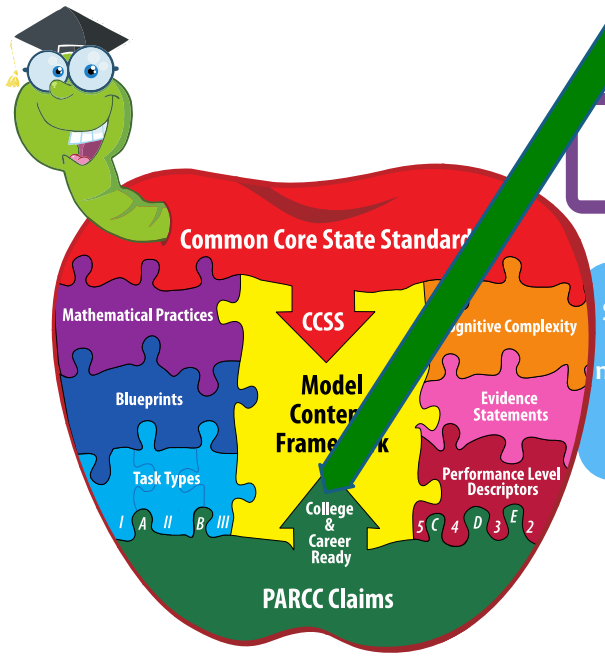


CCSS Math 5 NF "B" 7 C"

Model Content Framework

Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Major Content					
(OA.1–OA.4) Represent and solve problems involving multiplication and division. (OA.5–OA.6)Understand properties of multiplication and the relationship between multiplication and division. (OA.7) Multiply and divide within 100. (OA.8–OA.9)Solve problems involving the four operations, and identify and explain patterns in arithmetic. (3.NF.1–3.NF.3) Develop understanding of fractions as numbers. (3.MD.1-3.MD.2) Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. (3.MD.5-3.MD.7) Geometric measurement: understand concepts of area and relate area to multiplication and addition. **(17 Standards)**	(4.OA.1-4.OA.3) Use [illegible] operations with whole numbers to solve problems. (4.NBT.1-4.NBT.3) Generalize place value understanding for multi-digit whole numbers. (4.NBT.4-4.NBT.6) Use place value understanding and properties of operations to perform multi-digit arithmetic. (4.NF.1-4.NF.2) Extend understanding of fraction equivalence and ordering. (4.NF.3-4.NF.4) Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (4.NF.5-4.NF.7) Understand decimal notation for fractions, and compare decimal fractions. **(16 Standards)**	(5.NBT.1-5.NBT.4) Understand [illegible]e place value system. (5.NBT.5-5.NBT. 7) Perform operations with multi-digit whole numbers and with decimals to hundredths. (5.NF.1-5.NF.2) Use equivalent fractions as a strategy to add and subtract fractions. (5.NF.3-5.NF.7) Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (5.MD.3–5.MD.5) Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. **(17 Standards)**	(6.RP.1– 6.RP.3) Understand ratio concepts and use ratio reasoning to solve problems. (6.NS.1) Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (6.NS.5–6.NS.8) Apply and extend previous understandings of numbers to the system of rational numbers. (6.EE.1–6.EE.4) Apply and extend previous understandings of arithmetic to algebraic expressions. (6.EE.5–6.EE.8) Reason about and solve one-variable equations and inequalities. (6.EE.9) Represent and analyze quantitative relationships between dependent and independent variables. **(17 Standards)**	(7.RP.1–7.RP.3) Analyze proportional relationships and use them to solve real-world and mathematical problems. (7.NS.1–7.NS.3) Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers. (7.EE.1–7.EE.2) Use properties of operations to generate equivalent expressions. (7.EE.3–7.EE.4) Solve real-life and mathematical problems using numerical and algebraic expressions and equations. **(10 Standards)**	(8.EE.1–8.EE.4) Work with radicals and integer exponents. (8.EE.5–8.EE.6) Understand the connections between proportional relationships, lines and linear equations. (8.EE.7–8.EE.8) Analyze and solve linear equations and pairs of simultaneous linear equations. (8.G.1–8.G.5) Understand congruence and similarity using physical models, transparencies or geometry software. (8.G.6–8.G.8) Understand and apply the Pythagorean Theorem. (8.F.1–8.F.3) Define, evaluate and compare functions. **(19 Standards)**
Supporting Content					
(3.MD.3-3.MD4) Represent and interpret data. Geometry (3.G.1-3 .G.2) Reason with shapes and their attributes. **(4 Standards)**	(4.OA.4) Gain familiarity with factors and multiples. (4.MD.1-4.MD.3) Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (4.MD.4) Represent and interpret data. **(5 Standards)**	(5.MD.1) Convert like measurement units within a given measurement system. (5.MD.2) Represent and interpret data. **(2 Standards)**	(6.G.1–6.G.4) Solve real-world and mathematical problems involving area, surface area and volume. **(4 Standards)**	(7.SP.1–7.SP.2) Use random sampling to draw inferences about a population. (7.SP.5–7.SP.8) Investigate chance processes and develop, use, and evaluate probability models. **(6 Standards)**	(8.NS.1–8.NS.2) Know that there are numbers that are not rational, and approximate them by rational numbers. (8.F.4–8.F.5) Use functions to model relationships between quantities. (8.SP. 1–8.SP.4) Investigate patterns of association in bivariate data. **(8 Standards)**
Additional Content					
(NBT.1–NBT.3) Use place value understanding and properties of operations to perform multi-digit arithmetic. (3.MD.8) Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. **(4 Standards)**	(4.OA.5) Generate and analyze patterns. (4.MD.5-4.MD.7) Geometric measurement: understand concepts of angle and measure angles. (4.G.1-4.G.3) Draw and identify lines and angles, and classify shapes by properties of their lines and angles. **(7 Standards)**	(5.OA.1-5.OA.2) Write and interpret numerical expressions. (5.OA.3) Analyze patterns and relationships. (5.G.1–5.G.2) Graph points on the coordinate plane to solve real-world and mathematical problems. (5.G.3–5.G.4) Classify two-dimensional figures into categories based on their properties. **(7 Standards)**	(6.NS.2–6.NS.4) Compute fluently with multi-digit numbers and find common factors and multiples. (6.SP.1-6.SP.3)Develop understanding of statistical variability. (6.SP.4-6.SP.5) Summarize and describe distributions. **(8 Standards)**	(7.G.1–7.G.3) Draw, construct and describe geometrical figures and describe the relationships between them. (7.G.4–7.G.6) Solve real-life and mathematical problems involving angle measure, area, surface area and volume. (7.SP. -7.SP.4) Draw informal comparative inferences about two populations. **(8 Standards)**	(8.G.9) Solve real-world and mathematical problems involving volume of cylinders, cones and spheres. **(1 Standard)**

3. Determine its level of emphasis from the Claims.



Studen s ar on-track or ready fo ollege and careers

Sub-claim A: Students **solv problems involving the major content** for their grad level with connections to practices

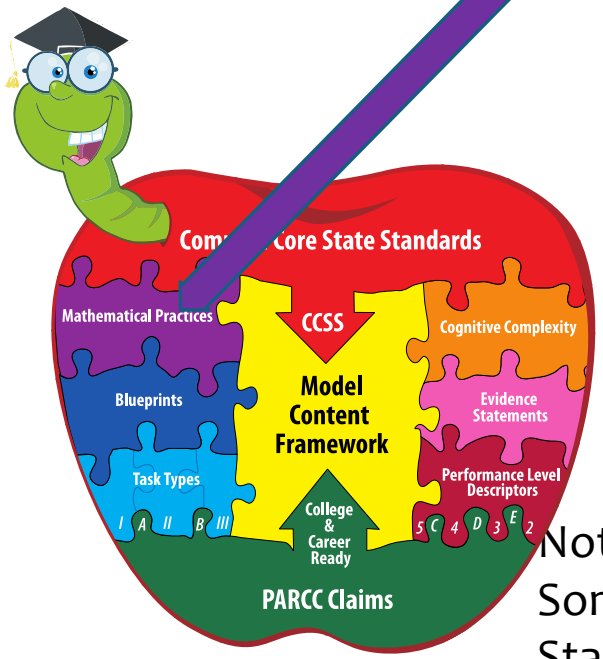
Sub-Claim B: Students **solve problems involving the additional and supporting content** for their grade level with connections to practices

Sub-claim C: Students **express mathematical reasoning** by constructing mathematical arguments and critiques

Sub-Claim D: Students solve real world problems engaging particularly in the **modeling practice**

Sub-Claim E: Student **demonstrate fluency** in areas set forth in the Standards for Content in grades 3-6

4. Determine which MP can best be used to teach it.



PARCC

Grade 5 PB A

Evidence Statement Key	Evidence Statement Text	ions	MP
5.NF.4b-1	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. b. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	i) 50% of the tasks present students with th dimensions and ask students to find the area; 50 sks give the fractions and the product and ask students to rectangle to model the problem.	2, 5
5.NF.6-1	Solve real world problems involving multiplication of fractions, e.g., by using visual fraction models or equations to represent the problem.	i) Tasks do not involve mixed numbers. ii) Situations include area and comparison/times as much, with product unknown. (See Table 2, p. 89 of CCSS and Table 3, p. 23 of Progression for Operations and Algebraic Thinking.) iii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.	1, 4, 5

Note: Find this match on the Evidence Statement table. Sometimes a standard does not have an exact Evidence Statement, but one is close. Use:

MP1: Make sense of problems and persevere in solving them.

MP4: Model with mathematics.

MP5: Use appropriate tools strategically.

5. Determine if it is assessed on the PBA, EOY, or both.



Type I – PBA and EOY

Type II – PBA (focus)

Type III – PBA (focus)

PARCC High Level Blueprints - Mathematics

Math item counts [illegible]orm

Assess-ment	Items	[illegible]3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Algebra I	Math I	Geometry	Math II	Algebra II	Math III
EOY	Type I 1 Point		28	28	26	24	26	21	19	19	19	19	19
	Type I 2 Point		8	8	7	8	5	11	12	12	12	12	14
	Type I 4 Point		-	-	1	1	2	3	3	3	3	3	2
EOY TOTAL	Type I		36	36	34	33	33	35	34	34	34	34	35
PBA/MYA	Type I 1Point		8	6	8	8	10	10	10	10	10	10	10
	Type I 2 Point		2	3	2	2	1	-	-	-	-	-	-
	Type II 3 Point		2	2	2	2	2	2	2	2	2	2	2
	Type II 4 Point		2	2	2	2	2	2	2	2	2	3	3
	Type III 3 Point	2	2	2	2	2	2	2	2	2	2	2	2
	Type III 6 Point	1	1	1	1	1	1	2	2	2	2	3	3
PBA/MYA TOTAL	Type I	10	10	9	10	10	11	10	10	10	10	10	10
	Type II	4	4	4	4	4	4	4	4	4	4	5	5
	Type III	3	3	3	3	3	3	4	4	4	4	5	5

6. Determine what kind of Task Type it can be: I, II, or III.

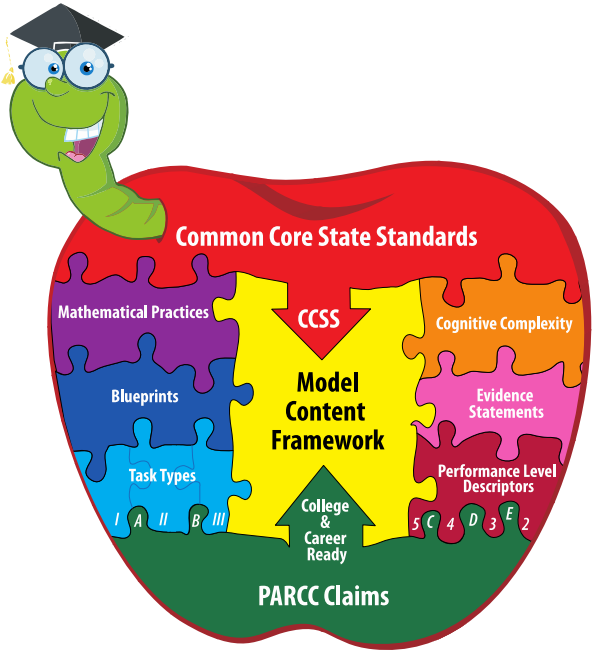


Overview of Task Types

- The PARCC assessments for mathematics will involve three primary types of tasks: Type I, II, and III.
- Each task type is described on the basis of several factors, principally the purpose of the task in generating evidence for certain sub claims.

Task Type	Description of Task Type
I. Tasks assessing *concepts, skills and procedures*	• Balance of conceptual understanding, fluency, and application • Can involve any or all mathematical practice standards • Machine scorable including innovative, computer-based formats • Will appear on the End of Year and Performance Based Assessment components • Sub-claims A, B and E
II. Tasks assessing *expressing mathematical reasoning*	• Each task calls for written arguments / justifications, critique of reasoning, or precision in mathematical statements (MP.3, 6). • Can involve other mathematical practice standards • May include a mix of machine scored and hand scored responses • Included on the Performance Based Assessment component • Sub-claim C
III. Tasks assessing *modeling / applications*	• Each task calls for modeling/application in a real-world context or scenario (MP.4) • Can involve other mathematical practice standards • May include a mix of machine scored and hand scored responses • Included on the Performance Based Assessment component • Sub-claim D

7. Scaffold instruction/assessment according to its PLD.



College and Career Ready

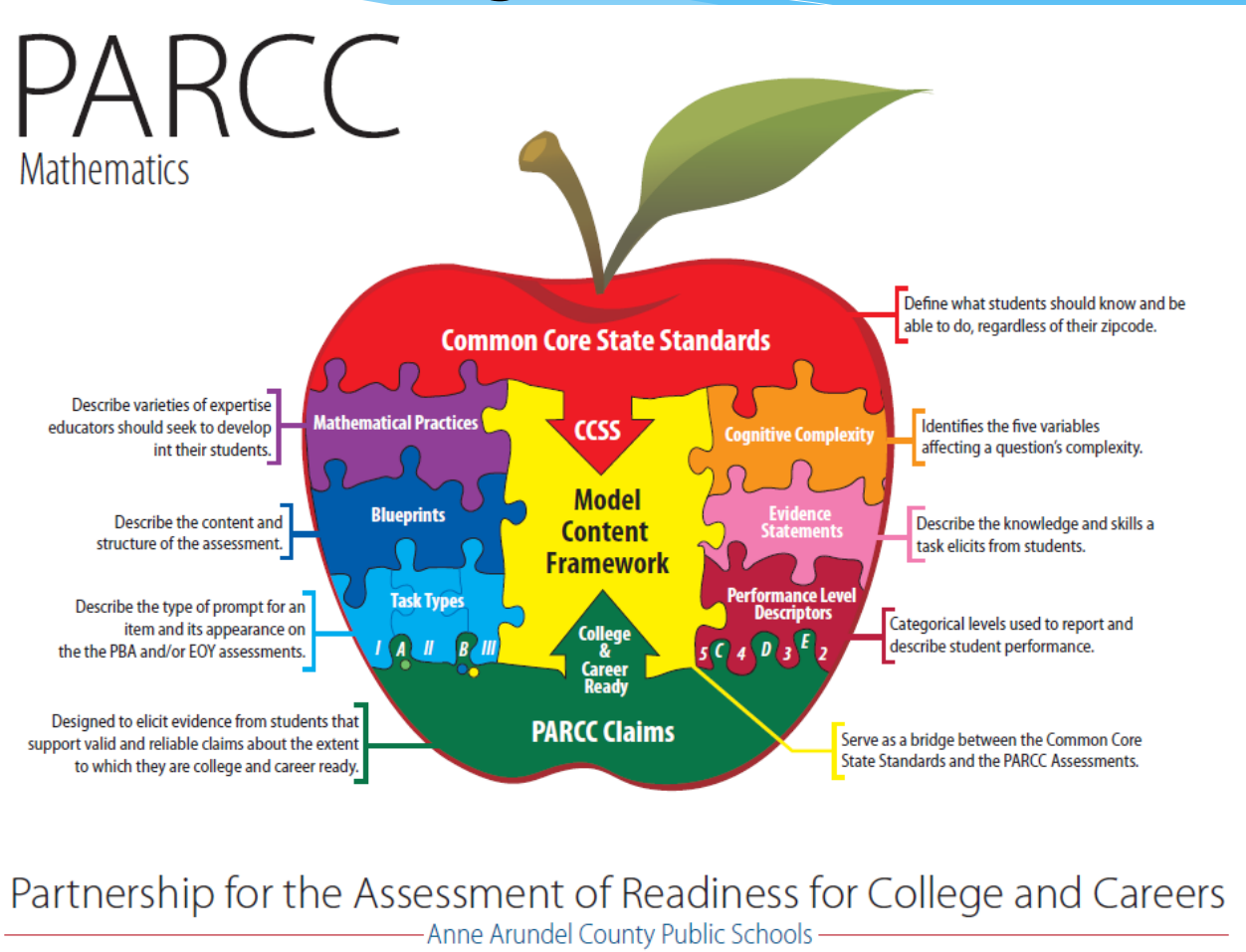
PARCC Partnership for Assessment of Readiness for College and Careers

Performance Level Descriptors – Grade 5 Mathematics

	Grade 5 Math : Sub-Claim A The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	**Level 4: Strong Command**	**Level 3: Moderate Command**	**Level 2: Partial Command**
Multiplying and Dividing with Fractions 5.NF.4a-1 5.NF.4a-2 5.NF.4b-1 5.NF.6-1 5.NF.6-2 5.NF.7a 5.NF.7b 5.NF.7c	**Creates** real-world problems, by multiplying a mixed number by a fraction, a fraction by a fraction, and a whole number by a fraction; dividing a fraction by a whole number and a whole number by a fraction and creating context for the mathematics and equations.	**Solves real-world problems,** by multiplying a **mixed number by a fraction, a fraction by a fraction** and a whole number by a fraction; dividing a fraction by a whole number and a whole number by a fraction using visual fraction models and creating context for the mathematics, including rectangular areas; **and interpreting the product and/or quotient.**	Multiplies a fraction or a whole number by a fraction and divides a fraction by a whole number – or whole number by a fraction – using visual fraction models and creating context for the mathematics, including rectangular areas.	Multiplies a fraction or a whole number by a fraction and divide a fraction by a whole number or whole number by a fraction using visual fraction models.

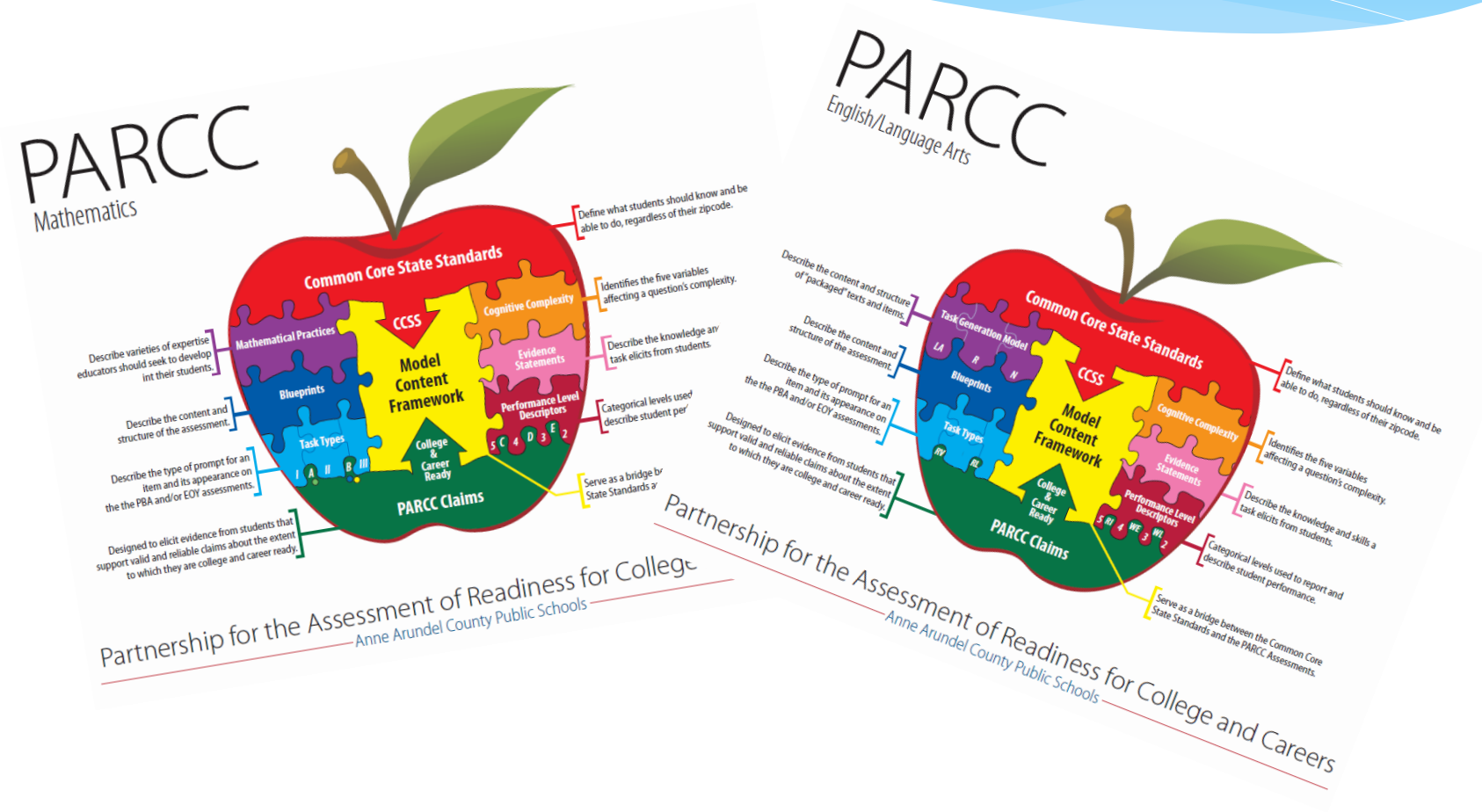
Assessment:

Describe your favorite piece of the apple and how it will change your instruction?



Assessment:

Choose your favorite piece of the apple, and describe how it will change your instruction.



Thank you……

…for joining us on a walk in the PARCC!!!