Building Assessment
Literacy:
Classroom Assessment
for Student Learning

CCSS Regional Training
March 2015

SECONDARY MATHEMATICS
Amy McQueen

"We need to consider that kids need different paths than we needed. The times are different; learning is different. We want to position ourselves to take kids right now, these kids that are different than many of us, and make sure that path is up to their needs so they can really value this subject. We want people to value the subject. Not everybody's going to be a mathematician, not everybody is going to use math every day, but please value it."

-Skip Fennell

Who are we? How many of us…
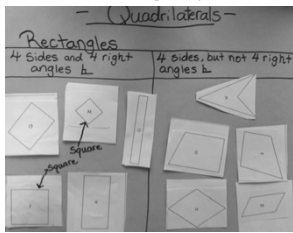
❖ teach middle school?

❖ teach high school?

❖ support teachers through a leadership role?

❖ work in a small school?

❖ work in a large school?

❖ have completed a SBAC practice test/ performance task in mathematics?

Table Introductions:
Your name, where you are from, & what you teach

Collective Commitments

❖ **Be respectful of one another**
  ❖ Cell phones off or on vibrate
  ❖ Avoid side conversations (jot notes instead?)
  ❖ Ask "we" questions; save "me" questions

❖ **Be a learner**
  ❖ Actively participate in readings, discussions and activities
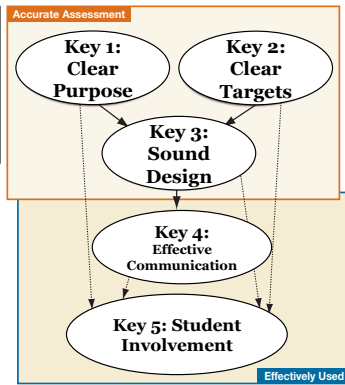 ❖ Keep the focus on teaching and learning; that which is within our sphere of influence

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Warm Up Activity:
Five Category Sort

Hint…

They are the 5 Keys to Quality Assessment!

The Keys to Quality Classroom Assessment

Accurate Assessment

Key 1: Clear Purpose

Key 2: Clear Targets

Key 3: Sound Design

Key 4: Effective Communication

Key 5: Student Involvement

Effectively Used

Learning Targets

❖ I can <u>articulate</u> the BIG IDEAS of each of the 5 Keys to Quality Assessment

❖ I can <u>implement</u> strategies from the 5 Keys to Quality Assessment to create a more robust picture of student growth and achievement.

❖ I can <u>create</u> classroom assessments through the lens of the 5 Keys to Quality Assessment.

❖ I can <u>design</u> an instructional plan and classroom assessments that will prepare my students to be successful with the Common Core State Standards.

Informal Assessment - "Door Check in"

Dots/Stickers

Tallies

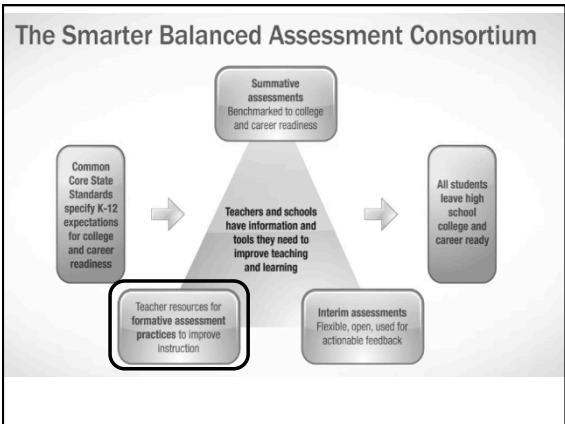Job Title

School Name

Initials

Name

Timeline

Progression

Behaviors

Rubric

What else???

How could you use an assessment tool like this one in your classroom?

The Smarter Balanced Assessment Consortium

Balanced Assessment

Accept: Annual standardized testing will occur. People will use the data incorrectly.

Change: I don't have to and shouldn't use the data to inform my instruction. I can focus on standards proficiency with CFAs.

The Difference:

- **SBAC:** *Use — to inform policy makers, district leaders, check in on school/districts. Users — district, state, national, community*
- **CFA:** *Use — to inform instruction. Users — teachers, students, parents.*

God grant me the serenity, to **Accept** the things I cannot change, **Courage** to change the things I can, and the **WISDOM** to know the difference

Key One: Competencies

Assessment processes and results serve clear and appropriate purposes.

- ❖ Identify the key users of classroom assessment information and know what their information needs are.
- ❖ Understand formative and summative assessments uses and know when to use each.

Review Key to Quality One: Clear Purpose
BIG IDEAS!

- ❖ Who is going to use the information from this assessment?
  - ❖ Student, teacher, parent, school, district, state, community
- ❖ How will they use it?
  - ❖ Formative = Assessment for Learning
  - ❖ Summative = Assessment of Learning
  - ❖ Dylan Wiliam: Plane Analogy
- ❖ What information, in what detail, do they need?
  - ❖ The answers to the first two questions determine the answer to this question…
  - ❖ No one assessment can fill everyone's information needs.

Review Key to Quality One: Clear Purpose

How does assessment *for* learning motivate students?

From the students perspective…every assignment is an assessment!

How often do our "assessments" meet student needs?

Turn and Talk
How can you make the purpose of assessment more clear so students see assessment as opportunities to learn and grow?

Formative or Summative??

Create pairs or triads at your table:
- ❖ Read and discuss a few of the assessments listed
- ❖ Decide if each is formative or summative?
- ❖ **Tell why?**

Use these sentence frames in your group:
- ❖ I think this is _____ because _____
- ❖ It could be both because _____.
- ❖ If you use it to _____, then it would be _____.

Assessment List

- ❖ OAKS/SBAC assessments
- ❖ Exit ticket
- ❖ District/state writing assessment
- ❖ Essential Skills work samples
- ❖ Think-write-pair-share
- ❖ Pre-assessment
- ❖ Semester exams
- ❖ Classwork/homework
- ❖ Progress monitors/quiz
- ❖ Unit tests
- ❖ Ticket out the door/exit tickets
- ❖ English Language Proficiency assessment

Informal Assessment
"Sentence Starters/Discussion Cards"

Check for understanding

A/B Partnering

Fishbowl

Table discussions

Intentional Grouping

How could you use an assessment tool like this one in your classroom?

Formative Assessment Practices

❖ Read the section in your handout titled "What Gives Formative Assessment Its Power?"

❖ Based on Black and Wiliam's observations, what would you say are the highest-impact formative assessment practices for your classroom?

Key 2: Competencies

❖ Assessments reflect clear student learning targets.
  ❖ Know how to identify the five kinds of learning targets.
  ❖ Know how to turn broad statements of content standards into classroom-level learning targets.
  ❖ Begin instructional planning with clear targets.
  ❖ Translate learning targets into student-friendly language.

Review Key to Quality Two: Clear Targets

BIG IDEAS!

❖ Learning Targets make it clear to the teacher and the student the purpose of the instruction.

❖ There are different kinds of targets.

❖ Classroom assessments must reflect the learning targets: what was taught, what students had opportunity to learn, or what they will have opportunity to learn.

Five Types of Learning Targets

❖ Knowledge Targets
  ❖ Factual information, procedural knowledge, and conceptual understandings underpinning each discipline.
❖ Reasoning Targets
  ❖ Thought processes students are to learn to do well within a range of subjects.
❖ Performance Skill Targets
  ❖ Demonstration or physical skill-based performance is at the heart of the learning.
❖ Product Targets
  ❖ Where creation of a product is the focus of the learning. Specifications for quality of the product itself are the focus of teaching and assessment.
❖ Disposition Targets
  ❖ Attitudes, motivations, and interests that affect students' approach to learning.

What does it look like to deconstruct a standard?

❖ Step 1: Standard: A.SSE.1a: Interpret expressions that represent a quantity in terms of its context.* (*Modeling standard) a. Interpret parts of an expression, such as terms, factors, and coefficients.

❖ Step 2: Type of Target?

  ❖ Reasoning Target

❖ Step 3a: Nouns?

  ❖ Expressions, quantity, context, terms, factors, coefficients

❖ Step 3b: Verbs?

  ❖ Interpret

Step 4: Knowledge Targets that underpin the reasoning.

For expressions that represent a contextual quantity, define and recognize parts of an expression, such as terms, factors, and coefficients.
Notes from Appendix A: limit to linear expressions and to exponential expressions with integer exponents.

Step 5: Reasoning Targets

For expressions that represent a contextual quantity, interpret parts of an expression, such as terms, factors, and coefficients in terms of the context.
Notes from Appendix A: limit to linear expressions and to exponential expressions with integer exponents based on place value and properties of operations work.

Step 6: Write targets in student friendly language.

- ❖ Knowledge:
  - ❖ I can identify parts of an expression.
- ❖ Reasoning:
  - ❖ I can interpret parts of an expression in terms of the context.

As you deconstruct standards, remember If... Then...

- ❖ If a standard is knowledge…
- ❖ If a standard is reasoning then…
- ❖ If a standard is a skill then…
- ❖ If a standard is a product then…

K = K targets	R = K + R targets	S = K + R + S Targets	P = K + R +S*+P targets (*Not always S)

Debate

Do you deconstruct the
standards yourself?

OR

Do you use outside resources?

And, other than time...WHY?

Video:
https://www.teachingchannel.org/videos/develop-worthwhile-math-problems-parcc

What if we don't agree????

If we cannot agree or are confused – we need to use
high quality resources to verify.

Look at standards above and below grade level to
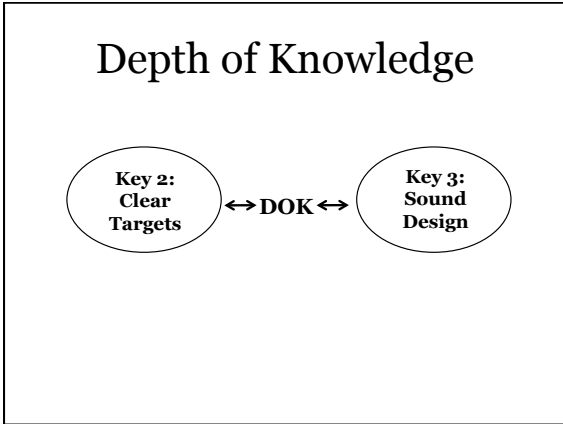grasp the progression

Oregon DOE:
http://www.ode.state.or.us/search/page/?id=3511

Kentucky DOE:
http://education.ky.gov/curriculum/math/Pages/Mathematics-
Deconstructed-Standards.aspx

Smarter Balanced Assessment Blueprints:
http://www.smarterbalanced.org/smarter-balanced-assessments/

7 Minute 56 Second Break

http://www.online-stopwatch.com/candle-timer/full-screen/

Depth of Knowledge

Key 2: Clear Targets ↔ **DOK** ↔ **Key 3: Sound Design**
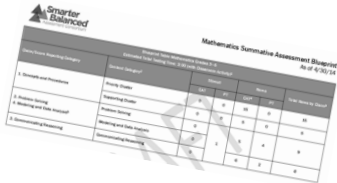

Bloom's & Depth of Knowledge (DOK)

Bloom's Taxonomy helps us think about

<u>what students are being asked to do</u>

when completing an assignment in terms of the skill they must have to complete a task or question. Bloom's

<u>does not examine how deeply students must engage with the content</u>

to complete the assignment, which

is where DOK comes in.

Video:
http://schools.nyc.gov/Academics/CommonCoreLibrary/ProfessionalLearning/DOK/default.htm

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SBAC Blueprint

❖ Claims

❖ Targets

❖ Depth of Knowledge

Using Depth-of-Knowledge Levels to Compare Test Items

Use a concept
Repeat
Calculate
Compare

Smarter Balanced Test Item:
Five swimmers compete in the 50-meter race. The finish time for each swimmer is shown in the video.

Current state test item:
Round the number 873 to the nearest hundred.

A. 800
B. 870
C. 900
D. 860

23.42
23.18
23.21
23.35
23.24
Men's 50 Meter Freestyle

Apply concepts Revise
Develop a logical argument
Compare

Explain how the results of the race would change if the race used a clock that rounded to the nearest tenth.

Source: Smarter Balanced Assessment Consortium, "Sample Items," (2013), http://sampleitems.smarterbalanced.org/itempreview/sbac/index.htm. Indiana Department of Education, "ISTEP+ Mathematics

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What's my DOK?

Depth of Knowledge (DOK) Levels

I think the DOK is _____ because _____.

Students need to know _____ because _____.

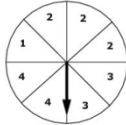## OAKS versus Smarter Balanced Assessment: OAKS

13. A gumball machine contains 24 red, 60 blue, and 48 white gumballs. What is the probability that the next gumball sold will be white?

   A. 4 chances in 11
   B. 1 chance in 2
   C. 4 chances in 5
   D. 4 chances in 7

❖ What do students have to know to do this problem?
❖ What Depth of Knowledge Level is this problem?

OAKS versus Smarter Balanced Assessment: SBAC

The spinner has 8 equal-sized sections, each labeled 1, 2, 3, or 4.
The arrow on the spinner is spun.

What is the probability of the arrow stopping on a section labeled with a 2?

Ⓐ $\frac{1}{4}$

Ⓑ $\frac{1}{8}$

Ⓒ $\frac{3}{8}$

Ⓓ $\frac{3}{4}$

❖ What do students have to know to do this problem?
❖ What Depth of Knowledge Level is this problem?

OAKS versus Smarter Balanced Assessment: SBAC

A representative sample of 50 students from a high school is surveyed.
Each student is asked what science class he or she is taking.

This table shows the responses.

Science Class	Number of Students
Physics	6
Chemistry	10
Biology	18
Earth Science	4
Health Science	12

❖ What do students have to know to do this problem?
❖ What Depth of Knowledge Level is this problem?

Select **all** of the statements that are valid based on the survey results.

☐ About 20% of students at the high school are taking Chemistry.

☐ About twice as many students are taking Health Science than are taking Physics.

☐ For every 150 students we could predict that at least 18 of the students are taking Physics.

☐ For every 25 students we could predict that at least 4 of the students are taking Earth Science.

OAKS versus Smarter Balanced Assessment: OAKS
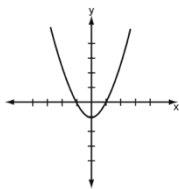
13

This graph is an example of what type of function?

Ⓐ Absolute Value

Ⓑ Exponential

Ⓒ Linear

Ⓓ Quadratic

❖ What do students have to know to do this problem?
❖ What Depth of Knowledge Level is this problem?

OAKS versus Smarter Balanced Assessment: SBA

4

The graph of a polynomial function is shown.

$f(x)$

120
100
80
60
40
20

-4 -2 0 2 4 6 8 10 x

-20
-40
-60 (0,-48)
-80

Create a possible function for the graph.

$(x + 1)$
$(x - 1)$
$(x + 2)$
$(x - 2)$
$(x + 3)$
$(x - 3)$
$(x + 4)$
$(x - 4)$

Delete

$f(x) =$

❖ What do students have to know to do this problem?
❖ What Depth of Knowledge Level is this problem?

Key Three Competencies

Learning targets are translated into assessments that yield accurate results.

❖ Design assessments to serve intended formative and summative purposes.

❖ Select assessment methods to match intended learning targets.

❖ Understand and apply principles of sampling learning appropriately.

❖ Write and/or select assessment items, tasks, scoring guides, and rubrics that meet standards of quality.

❖ Know and avoid sources of bias that distort results.

Review Key to Quality 3: Sound Design

BIG IDEAS!

1. Decide **WHO** will use the assessment

2. Decide **WHAT** to assess

3. Decide **HOW** to assess

4. Develop the Assessment Plan

5. Write the Assessment

6. Review the Assessment

7. Set Scoring agreements/Timeline

Give the assessment!

Assessment Methods

- ❖ Selected Response
  - ❖ Students select the correct or best response from a list provided.
- ❖ Written Response
  - ❖ Students construct an answer in response to a question or task rather than to select the answer from a list.
- ❖ Performance Assessment
  - ❖ Students complete a task that is evaluated by judging the level of quality using a rubric.
- ❖ Personal Communication
  - ❖ Students share what they have learned through structured and unstructured interactions with teachers.

Target-Method Match

	Selected Response	Written Response	Performance Assessment	Personal Communication
Knowledge	Good	Strong	Partial	Strong
Reasoning	Good	Strong	Partial	Strong
Skill	Partial	Poor	Strong	Partial
Product	Poor	Poor	Strong	Poor

Revise Questions through DOK lens

1. Solve the equation for x: $7 + 3x = 5x + 13$
   - A. $x = -10$
   - B. $x = -3$
   - C. $x = 3$
   - D. $x = 10$

2. Solve the equation for x: $4(2x - 3) = -6(4 - 2x)$
   - A. $x = -21/10$
   - B. $x = -36/20$
   - C. $x = -12/20$
   - D. $x = 3$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#14	1	EE	D	2	8.EE.C.7a	N/A	See exemplar

1865

Drag a number into each box to create an equation that has no solution.

0
1
2
3
4
5
6
7
8
9

$$8x - 3x + 2 - x = \boxed{}x + \boxed{}$$

What type of target (Knowledge, Reasoning, Performance Skill, or Product) is this question?

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#18	3	EE	D	3	8.EE.C.7a	1, 3	See exemplar

2042

Consider this equation.

$$c = ax - bx$$

Joseph claims that if a, b, and c are non-negative integers, then the equation has exactly one solution for x.

Select **all** cases that show Joseph's claim is **incorrect**.

☐ $a - b = 1, c = 0$

☐ $a = b, c \neq 0$

☐ $a = b, c = 0$

☐ $a - b = 1, c \neq 1$

☐ $a \neq b, c = 0$

What type of target (Knowledge, Reasoning, Performance Skill, or Product) is this question?

Revise Questions through DOK lens

Try it! Use one of your own assessments or revise this OAKS question.

9. In the figure below, lines m and n are parallel. If m $\angle 1 = 100°$, then find m $\angle 5$.

1 / 2
3 / 4   m

5 / 6
7 / 8   n

A.   80°
B.   100°
C.   110°
D.   140°

2/25/15

General Assessment Question Writing Tips from Stiggins

- ❖ Keep wording simple and focused. Aim for the lowest possible reading level.
- ❖ Ask a full question in the stem.
- ❖ Eliminate clues to the correct answer either within the question or across questions within a test.
- ❖ Do not make the correct answer obvious to students who have not studied the material.
- ❖ Highlight critical, easily overlooked words.
- ❖ Have a qualified colleague read your items to ensure their appropriateness.
- ❖ Double-check the scoring key for accuracy before scoring.

Now... Reflect and revise if needed using these considerations.

What do you notice?

Lunch, Glorious Lunch!

45 minutes

http://www.online-stopwatch.com/candle-timer/full-screen/


Key to Quality Four: Effective Communication

BIG IDEAS!

- ❖ Communication differs based on assessment purpose.
- ❖ Results are communicated to intended users in a TIMELY and UNDERSTANDABLE way.
- ❖ Students receive descriptive feedback during learning.
- ❖ Grading practices accurately communicate about student achievement.

Turn & Talk:
When have you received effective feedback? Ineffective? What was the effect?
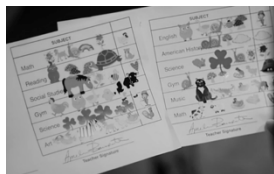
Key Four: Competencies

Assessment results function to increase student achievement. Results are managed well, combined appropriately, and communicated effectively.

- ❖ Use assessment information to plan instruction.
- ❖ Offer effective feedback to students during the learning.
- ❖ Record formative and summative assessment information accurately.
- ❖ Combine and summarize information appropriately to accurately reflect current level of student learning.

Descriptive or Evaluative?

Descriptive or Evaluative Feedback?

Mark each example of descriptive feedback with a D and each example of evaluative feedback with and E. If you believe it is neither, mark it with an X.

_____ Try harder next time.

_____ 70%

_____ You maintained eye contact with the audience throughout your whole presentation.

_____ Good job of getting ready for lunch.

_____ Table 3 is ready for lunch. They have their desks clear, they are sitting down, and they are quiet.

_____ ☺

_____ +

Conditions for Effective Communication

- ❖ Focuses on attributes of the student's work rather than attributes of the student as a learner ("here is how to make your solution pathway clear" rather than "just try harder")

- ❖ Is descriptive of that work, revealing to the student how to do better the next time, rather than judgmental

- ❖ Is clearly understood by the intended user, leading to specific inferences as to what is needed

- ❖ Is sufficiently detailed to be helpful yet not so comprehensive as to overwhelm

- ❖ Arrives in time to inform the learning, versus too late

Informal Assessment - "Thumbs up"

Reflect on
Understanding

Gauging
Confusion

Need for more/
less time

What else???

**How could you use an informal assessment tool
like this one in your classroom?**

Keys to Quality 5: Student Involvement

What contributes most to student learning success?

Students decide—
- whether the learning is worth the effort
  required to attain it.
- whether they are capable of reaching the
  learning targets.
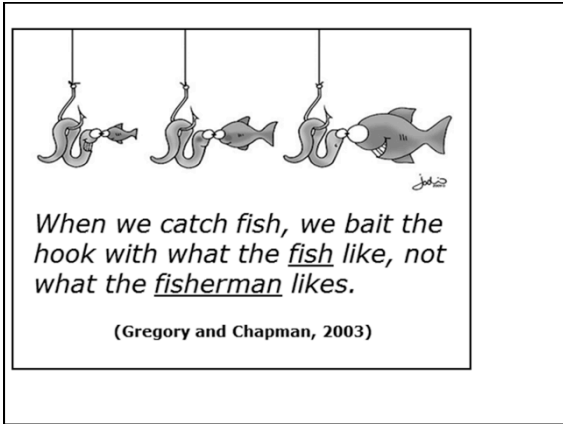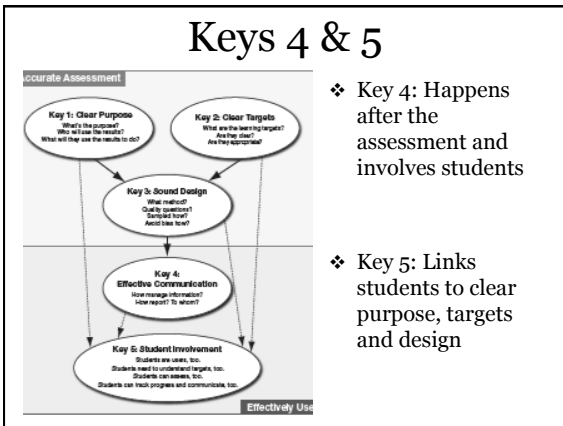- whether to keep learning or quit working.
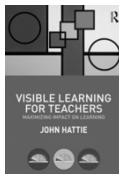
*"WE MUST KEEP STUDENTS IN TOUCH WITH THEIR
PROGRESS AS LEARNERS THAT KEEP THEM BELIEVING
IN THEMSELVES AS LEARNERS SO THAT THEY WILL KEEP
TRYING!"*   *- CASL, 2012, P.9*

Key Five: Competencies
Students are active participants in the
assessment process.

- Identify students as important users of
  assessment information.
- Share learning targets and standards of
  quality with students.
- Design assessments so students can self-
  assess and set goals on the basis of results.
- Involve students in tracking, reflecting on,
  and sharing their own learning progress.

When we catch fish, we bait the hook with what the _fish_ like, not what the _fisherman_ likes.

(Gregory and Chapman, 2003)

Keys 4 & 5

❖ Key 4: Happens after the assessment and involves students

❖ Key 5: Links students to clear purpose, targets and design

Seven Strategies of Assessment for Learning

❖ **Where Am I Going?**

 ❖ Strategy 1: Provide students with a clear and understandable vision of the learning target.

  ❖ Target written in student friendly language (perhaps by students themselves)

  ❖ Students know assessment blueprint (share or create with students)

 ❖ Strategy 2: Use examples and models of strong and weak work.

  ❖ Engage students in understanding what makes each example strong or weak.

Seven Strategies of Assessment for Learning

- ❖ **Where Am I Now?**
  - ❖ Strategy 3: Offer regular descriptive feedback.
    - ❖ Use the blueprint to provide <u>feedback </u>target by target
  - ❖ Strategy 4: Teach students to self-assess and set goals.
    - ❖ "Traffic light" for selected response; self-revision for written and performance tasks
  - http://www.youtube.com/watch?v=Ed2KRddgv-4

Seven Strategies of Assessment for Learning

- ❖ **How can I close the gap?**
  - ❖ Strategy 5: Design lessons to focus on one learning target or aspect of quality at a time.
    - ❖ Use student generated information from self-assessments to plan and differentiate
    - ❖ Engage students in writing test items
  - ❖ Strategy 6: Teach students focused revision.
    - ❖ How do I make this answer better?
  - ❖ Strategy 7: Engage students in self-reflection, and let them keep track of and share their learning.

Designing a Quiz or Test for Student Self-Assessment and Goal Setting

- ❖ Structure a quiz or test to function as effective feedback and as a means for self-assessment and goal setting.

- ❖ Give students an opportunity to improve before the graded event.

How This Works

1. Identify what learning target each quiz or test item represents and fill out the first two columns of the form "Reviewing My Results."

Problem	Learning Target	Right	Wrong	Simple Mistake	Don't Get It
1	I can identify parts of an expression.				
2	I can identify parts of an expression.				
3	I can identify parts of an expression.				

How This Works (Continued)

2. Administer the quiz or test, correct it, and hand it back, along with the form.

3. Students review the corrected assessment and mark "Right" or "Wrong" on the form.

4. Then students decide for the wrong answers "Simple Mistake" or "Don't Get It."


Clear Targets and Student Goal Setting

Problem	Learning Target	Right	Wrong	Simple Mistake	Don't Get It
1	I can identify parts of an expression.	x			
2	I can identify parts of an expression.	x			
3	I can identify parts of an expression.		x	x	

How This Works (Continued)

5. Students analyze the information to decide the following:
   - ❖ I'm good at these learning targets
   - ❖ I'm pretty good at these learning targets, but need a little review
   - ❖ I need to keep focusing on these learning targets

6. Students can follow this activity up by setting goals for further work, if appropriate.

Key to Quality Five: Student Involvement

YOU

ARE A GENIUS
AND THE WORLD NEEDS
YOUR CONTRIBUTION

-Angela Maiers-
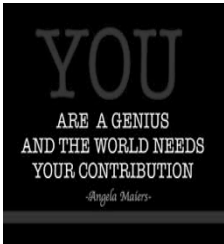
How do you involve students in tracking, reflecting on, and sharing their own learning progress?

- ❖ Record your ideas on page 30.
- ❖ Find a partner.
- ❖ Share one thing you wrote, and let your partner share one thing he/she wrote.
- ❖ Record your partner's idea on your paper.
- ❖ Find another partner and repeat

Assessments designed with students' needs in mind function as effective feedback:

Students understand the results.

Students know what to do next.

Students can self-assess and set goals.

**Students are more likely to
keep trying.**

Work Time

- ❖ Revise classroom assessments for DOK
- ❖ Revise classroom assessments for bias/distortion
- ❖ Revise classroom assessments using best practices
- ❖ Deconstruct standards
- ❖ Create clear scoring rubrics
- ❖ Create student communication tools for classroom assessments and learning targets
- ❖ Explore more SBAC sample items

Questions?

Learning Targets

- ❖ I can <u>articulate</u> the BIG IDEAS of each of the 5 Keys to Quality Assessment
- ❖ I can <u>implement</u> strategies from the 5 Keys to Quality Assessment to create a more robust picture of student growth and achievement.
- ❖ I can <u>create</u> classroom assessments through the lens of the 5 Keys to Quality Assessment.
- ❖ I can <u>design</u> an instructional plan and classroom assessments that will prepare my students to be successful with the Common Core State Standards.

Reflecting on your Learning

How does what you learned today change or affect your ongoing classroom assessment?

What is one thing you are willing to commit to try in your classroom?

We do not learn from experience...we learn from reflecting on experience.
John Dewey