

# Getting the Most Out of Common Assessments

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*Pioneer is one of eight schools in the nation featured in the video “The Power of Professional Learning Communities at Work: Bringing the Big Ideas to Life.” Pioneer’s standardized test scores rank first of all the middle schools in Orange County and in the top 1 percent for the state of California. Additionally, Pioneer was named a California Distinguished School in 2003 and 2007, and is currently a state nominee for National Blue Ribbon recognition.*

Like most schools that begin implementing PLC practices, the faculty at Pioneer Middle School learned about the importance of common formative assessments and decided that we would utilize this powerful tool to help us focus on learning. Unfortunately, as time progressed, our departmental teams experienced varied levels of success; some teams felt they gained significant benefits from their common assessments, while other teams were far less enthusiastic with their results.

As principal, my first thought was to question whether every team was truly using common assessments, or were they just going through the motions to appease me. After asking these questions at a faculty meeting, I was pleased to find that every team was frequently administering common assessments—in fact, every team said they also use our site assessment software, which produces powerful reports to analyze the results.

At this point, I was perplexed: If every team was giving common assessments and had access to the same types of disaggregated results, then why were our teams experiencing such varied outcomes? Upon further consideration, I realized that I was asking the wrong question; that is, it was not a question of, “Are we giving common assessments?” but “What are we doing with our common assessment data?” When we discussed this question, we found great differences from team to team, with some teams digging deeply into their common assessment data, and other teams doing almost nothing with the information.

Based upon this revelation, we discussed *why* we give common assessments, and determined that common assessments provide essential learning information that enabled each team to:

- **Identify specifically which students did not demonstrate mastery of essential standard(s):** Because we give common assessments to measure student mastery of essential standard(s), common assessments should identify students that need additional help and support. Additionally, if an assessment measures more than one essential standard, then the test results must provide more than an over-all score for each student, but also delineate specifically which standards each student did not pass.
- **Identify effective instructional practices:** Because our teachers have autonomy in *how* they teach essential standards, it is vital that common assessment data help validate which practices were effective. This can be done best when common assessment results are displayed in such a way that allows each teacher to compare their students' results to other teachers who teach the same course.
- **Identify patterns in student mistakes:** Besides using common assessment results to identify best instructional practices, this data should also be used to determine ineffective instructional practices. When analyzing the types of mistakes that failing students make, patterns emerge that can point to weaknesses or gaps in the initial instruction.
- **Measure the accuracy of the assessment:** Through a careful item analysis of the assessment, a team can determine the validity of each test question. Over time, this will build a team's capacity to create better assessments.
- **Plan and target interventions:** The ultimate goal of any PLC is to ensure high levels of learning for all students. If a team uses common assessments to identify students in need of additional help, determine effective and ineffective instructional practices, and measure the validity of the assessment, then they should have the information needed to plan and implement targeted interventions to assist the students that need help.

Once we realized that giving common assessments is not an end in itself, but instead a means to better measure our teaching and student learning, we decided that whenever a team reviews common assessment data, they would ask the following guiding questions:

- **Specifically which students did not demonstrate mastery?**
- **Which instructional practices proved to be most effective?**
- **What patterns can we identify from the student mistakes?**
- **How can we improve this assessment?**

- **What interventions are needed to provide failed students additional time and support?**

By asking these questions, we believe that we can get the most out of our common assessments, which in turn, allows us to give the most to our students. In the end, we learned from this experience that the power of common assessment comes not from giving them, but from what we do with them after we give them!

# Analyzing Common Assessment

Grade Level \_\_\_\_\_

Pre Assessment

Subject Area \_\_\_\_\_

Mid Assessment

Teacher/Team \_\_\_\_\_

Post Assessment

Name of Assessment \_\_\_\_\_

<b>Power Standard(s) or Learning Targets Measured</b>
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Questions	Responses
What areas did our students do well on this assessment?	
What instructional strategies helped our students do well?	
What skill deficiencies do we see?	
What patterns do we see in the mistakes, and what do they tell us?	
Which students did not master essential standards and will need additional time and support?  What intervention will be provided to address unlearned skills?	
Do we need to tweak or improve this assessment?	

**\* Please complete 1 form 3<sup>rd</sup> Qtr and 1 form 4<sup>th</sup> Qtr and keep them in your PLC Binder\***

## White River High School Algebra Team

### Power Standards for Unit 1:

#### **Common Core State Standards:**

N.Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. (Claim 1,2,4)

N.Q.2 Define appropriate quantities for the purpose of descriptive modeling. (Claim 1,2,4)

N.Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (Claim 1,2,4)

A.SSE.1 Interpret expressions that represent a quantity in terms of its context. (Claim 1,2)

A.CED.1 Create equations and inequalities in one variable and use them to solve problems. (Claim 1,2,4)

A.CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. (Claim 1,2,4)

A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. (Claim 1,3,4)

A.REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. (Claim 1,2,4)

A.REI.4 Solve quadratic equations in one variable.

b. Solve by taking square roots (Claim 1,2,4)

Since there are so many standards in this unit, the team decided to group them into two power standards: Solving Equations and Solving Inequalities. Students will receive a score in each of these topics.

After agreeing upon the “power standards” for a particular unit, the team collaboratively developed “learning targets” for students:

### Learning Targets for Unit 1

#### **Learning Targets:**

##### **Solving Equations**

2.1: I can solve one-step equations for a single variable by adding or subtracting – 1 day

2.2: I can solve one-step equations for a single variable by multiplying or dividing – 1 day

2.3: I can solve two-step equations for a single variable by multiple inverse operations – 2 days

2.4: I can solve equations with a single variable on both sides of the equation – 2 days

- 2.5: I can solve a formula for a given variable and solve other literal equations. – 3 days
- 2.6: I can solve equations in one variable that contain absolute value expressions – 2 days
- 2.7: I can write and use rates, ratios, and unit rates to solve proportional problems – 1 day

### Solving Inequalities

- 3.1: I can identify and graph solutions of inequalities in one variable – 1 day
- 3.2: I can solve one-step equations for a single variable by addition and subtraction – 1 day
- 3.3: I can solve one-step equations for a single variable by multiplication and division – 2 days
- 3.4: I can solve multi-step equations for a single variable by multiple inverse operations – 2 days
- 3.5: I can solve inequalities that contain a variable on both sides – 2 days
- 3.6: I can solve compound inequalities in one variable and graph their solution sets – 2 days
- 3.7: I can solve inequalities in one variable involving absolute value expressions – 1 day

Once the algebra team had collaboratively agreed upon the power standards for unit one, they were then able to focus their discussions on such topics as pacing, engaging classroom activities reaching a variety of levels of students, agreeing on what student work would like if the standards were met, appropriate homework assignments, common scoring, and assessment formats and conditions.

## Developing and Utilizing the Results of Common Formative Assessments

Clarifying and adding meaning to mathematics standards is the basic foundation piece of the work of a collaborative team. The team would next move to the rather logical question, “How will we know if our students are learning?” Collaborative teams in professional learning communities would develop common, formative assessments in order to monitor the learning of each student, *skill-by-skill*, on a frequent and timely basis. Collaborative teams aren’t content with merely clarifying what students must learn. They pursue a cultural shift from an almost exclusive reliance on summative assessments, to more frequent, collaboratively developed, common, formative assessments. Simply put, being a mathematics teacher in a professional learning community means being part of a collaborative team that recognizes students are more apt to perform well on high stakes summative assessments, *if the quality of their learning is regularly monitored along the way*—especially when the results of the assessments are used to provide students with additional time, support, or enrichment.

It’s not so much that team members in professional learning communities *develop* common formative assessments, *the power of formative assessments lies in how they are utilized!* If a visitor was to visit a mathematics team in a professional learning community during team collaboration time, more than likely they would observe teachers collaboratively analyzing student learning data, as well as examples of student work. They would be discussing assessment results, item by item, as well as the effectiveness of the assessment itself. Teachers

would be highlighting strengths in student learning. They would be identifying areas of concern. They would be sharing instructional strategies that were used—learning from each other’s strengths. They would be monitoring the learning of each student, skill-by-skill. Most importantly, they would be planning together, collaboratively deciding on appropriate interventions for students, planning units of instruction, sharing instructional strategies and materials, reflecting on the effectiveness of instructional practices that were utilized, and goal setting. In short, they would be drilling deep into the learning of their students, and their effectiveness as a team. For example, as a result of their collaborative analysis of the results of their formative assessments and an examination of student work, Mr. Mothershead noted that the algebra team at White River High School *collaboratively* identified specific areas in which students struggled, as well as identify why they seemed to struggle.

**The algebra team has reorganized their assessments to help focus the conversations on student learning and level of understanding instead of retaining points to earn a score. The team has committed to not have point values on their assessments; instead, the team has four levels of questions for each group of standards. The level of understanding as noted on the four point scale depends on the knowledge demonstrated on the different levels of questions. The conversations now are about the level of understanding and the gap in their knowledge instead of needing one more point to get a 4. By restructuring the assessment, the team has been able to differentiate and scaffold for students easier by focusing on lower level questions and then building from that point.**

#### **Algebra Team: Student Struggles in Unit 1:**

- Difference between combining like terms on the same side of equal sign and combining like terms on different sides of equal sign.
- Mathematical operations of positive and negative numbers.
- Identifying like terms when dealing with same variable but different exponents.

#### **Why Kids Struggled**

- Looking at item analysis to determine if it was the wording of the question, students got things mixed up with other concepts, or students just did not know.
- Did not fully understand role of equal sign when solving and what it meant.
- Misunderstanding of what subtraction meant when subtracting positive and negative numbers.
- Misconception that the answer is always the sign of the larger number when dealing with operations of positive and negative numbers.

### *Additional Time and Support*

Since students learn at different rates and in different ways, in a school that functions as a professional learning community there is the recognition that some students, even our best students, will struggle with specific skills. When they do, they need additional time and support—as well as encouragement. In more traditional schools, mathematics teachers are left to fend for themselves when they realize some kids just aren't "getting it". The fact is, there is only so much the best intentioned and talented teachers can do by themselves. The number of students who need additional time and support is often too great and the range of needs is often too wide. In traditional schools, the absence of a school-wide, systematic plan to provide struggling students with additional time and support sets both students and teachers up for failure. On the other hand, mathematics teachers in schools that function as a professional learning community have the benefit of a systematic, *school-wide plan* of "layered interventions" that provides students help when they experience difficulty in their learning. If a school does everything else, even at a high level of quality, but fails to provide additional time and support when students experience difficulty in their learning, the school's effectiveness will be problematic.

Further, schools that function as professional learning communities recognize it is their *moral* obligation to provide help to struggling students. As DuFour, DuFour, Eaker and Many (2010) observe, "It is disingenuous for any school to claim its purpose is to help all students learn at high levels and then fail to create a system of intervention to give struggling learners additional time and support for learning." (p. 104) At its most basic level, providing additional time and support to students who are experiencing difficulty is simply providing *all* students with the help everyone would want for *their own* child.

What does "additional time and support" look like in a school that functions as a professional learning community? Following the advice of DuFour, DuFour, Eaker and Many (2010), first and foremost, it would be a *systematic plan* that is *timely* and *directive*, rather than merely "invitational". Because the plan is composed of a series of sequential "layers", students benefit from ever increasing focused support based on their level of need. Initially, most interventions occur within the classroom. For example, a teacher simply might re-teach a particular skill set. Perhaps, students who demonstrated proficiency might assist students who are struggling. However, some students may need the benefit of more intense interventions such as a tutor, or time in a mathematics lab, or a specific math program for students who are experiencing difficulty. *In a professional learning community students have the benefit of planned interventions designed to help them learn each essential skill.*



At the White River High School students benefit from a school-wide, systematic plan for additional time and support. As part of this plan, algebra students are supported in their learning because the *algebra team*, has collaboratively developed a plan to help students when they experience difficulty.

### Algebra Team: Extra Help and Intervention

- Throughout the unit, we will use the data from the quick checks for understanding to guide our intervention and determine which students need extra help.
- The initial help for students will be provided in individual classrooms. (For example, if most students miss the same problem or part of problem, the teacher will simply re-teach, or perhaps the teacher will use various forms of grouping so that students can help each other.)
- Before and after school help. (scheduled time for individual teachers to be available for students before and after school.
- STAT time for directed intervention for students. (STAT time at White River High School is a specific period within the school day in which all students receive additional time, support or enrichment.
- Collaborative group work in which students will go through corrections, example problems and explains their reasoning to support their work.
- After unit activities to review main points of power standards.
  - Use of Algebra Tiles to conceptualize solving equations and combining like terms.
  - Use deck of cards and number lines for operations of positive and negative numbers.
  - Use items such as brooms, jars, and blocks to emphasize idea of combining like terms.
- Online textbook resources such as tutorials, and practice quizzes.
- Extra support through Algebra Support class for those enrolled. Algebra Support uses pre-teaching and re-teaching models and supports student learning based on data from Algebra assessments.
- Co-teaching model to support students who receive services
- Specific learning activities connected to learning targets with opportunities for extensions for those who got it.
- Performance Task connected to standards and learning targets

Of course, not all students need additional time and support. Many students demonstrate proficiency in their learning, and yet, they could learn more. All schools have students who make excellent grades, but are “under learning”. In most schools it is left up to individual

teachers to develop ways to enrich or extend student learning. Again, there is only so much even the most dedicated teachers can do by themselves. Being a teacher in a professional learning community means teachers have the benefit of a school-wide plan to enrich and extend student learning, stretching them far beyond proficiency.