# Creating CCSS-Aligned Curriculum in Grades 9-12

By Joe Crawford

In my last two articles, we looked at the process of building standards-based curriculum documents to drive instruction in the K-8 environment. In the spirit of continuity, we will now look at "closing the loop" and following this work into the high school experience. In those articles, I made the case for common learning expectations across grade levels and explained the process to do that work while using the CCSS as the basis for those documents. We did this while showing specific examples of this work applied to specific CCSS. If the reader missed those articles, reading those will help place this article in better context.

All of this work is done to create a system of curriculum, instruction, and assessment - the existence of such an aligned system being the prerequisite for applying systems thinking to our curriculum, instruction, and assessment work. The district must first have a curriculum, instruction, and assessment system in place before systems thinking can be applied.

To quickly review that process, it begins with the CCSS and the Domains contained within the CCSS. In each grade level/course, the appropriate CCSS are used to develop what I used to call Local CCS Standards and Ainsworth calls Priority Standards, "prioritized standards that are derived from a systemic and balanced approach to distinguishing which standards are absolutely essential for student success from those that are 'nice to know'." I really like Ainsworth's term better than my original term, so let's stick with that. In the previous articles, I took the CCSS Domain of Geometry from the Math CCSS, applied Marzano's process of prioritizing, unpacking, and powering the standards within that Domain into Priority Standards, or end-of-year learning targets for that Domain.

Once these end-of-year learning targets, what we call Priority Standards, are identified, the next step recommended is to create within-year learning targets that scaffold the learning through the four quarters of the school year to clearly set within-year learning targets, what we call Instructional Objectives, a kind of pacing guide if you will. Samples of these for grades K-8 are in those previous articles and may be referenced if the reader so chooses.

These Instructional Objectives are then shared with everyone - teachers, students, and parents, and these Instructional Objectives then become the focus of all curriculum, instruction, and assessment and give teachers, students, and parents a common set of learning expectations across grade levels and schools within the district, regardless of the teacher, class, or school. All grade level/course teachers are teaching the same skills, at about the same time, using the same assessments and scoring those assessments on the same scale.

Now common, formative assessments make sense. Given these common learning expectations, assessments, and scoring guides, how do teachers account for differences between and among class performance? Scoring these assessments and reporting those results immediately to all teachers provides both a topic and a format for teachers to discuss who learned and who didn't, what standards were learned by what students, and what instructional strategies worked and what did not. All of these are critical to Professional Learning Communities' work to improve student performance through cooperation between and among the teachers.

**On to the High School**

Since the previous articles looked at applying this process K-8, let's look at applying this process to the high school next. Once this work goes to the high school level, there is one huge difference in the CCSS that will need to be addressed. The CCSS are no longer organized by distinct grade level; the CCSS are now presented as high school (9-12) standards. Because of the various and sundry organizational patterns in high school math course work (and in ELA, for that matter), it is now important for the entire high school math (and ELA) department to work together to ensure adequate learning opportunities across the entire 9-12 spectrum of high school course work. The CCSS must be parsed out over the entire 9-12 math academic experience and spread among the various courses offered and experienced by students.

In doing this work, I usually suggest the high school math department work together to first become familiar with the CCSS and the specific skills contained in each of the Domains. They must first answer the questions, what are the Domains, and what skills are contained in each Domain? Once this overall view of all the skills expected in the 9-12 experience is developed, the department can then go about the work of parsing those skills into various courses and grade levels. For example many math teachers feel strongly the need to put some Geometry skills into Algebra 1 to prepare students for Geometry, usually the next course in most high school math sequences. The inclusion of Geometry skills in Algebra will, however, take up time, so it is important that those decisions be made at the department level and articulated between and among courses-no matter how many skills we place in a course, we still have only about 180 days for the students to learn those skills, so teachers must pay close attention as they assign those skills to ensure a learnable amount of the most important, most critical learnings for each course and the entire 9`-12 math experience.

Since this series of articles has used the Geometry Domain from the Math CCSS, this article will continue that discussion of the Geometry Domain. The Geometry Domain contains:

1. Modeling with Geometry;
2. Circles;
3. Congruence;
4. Similarity, Right Triangles, and Trigonometry;
5. Expressing Geometric Properties with Equations;
6. Geometric Measure and Dimension.

As the math department become familiar with the standards in these and all the other Domains in 9-12 math, they come to understand the expectations for the totality of the 9-12 math experience and decide where and when those CCSS skills in the Geometry and all other Domains will be learned. Which specific courses are identified as the best place to address the skills contained in the Geometry Domain? As discussed above, the single course Geometry may or may not be where the professional staff decides to address the Geometry Domain, but again, it is imperative this discussion be held with the entire math department to ensure the totality of the high school math experience is considered in ensuring mastery of all the most critical, most important skills that ALL students must know and be able to do.

Another area that should weigh heavily here is full consideration of the assessment system used to measure student mastery. Particularly at the high school level, not all states are requiring new assessments be developed but are rather using traditional high school assessments like ACT. These assessments have been in place for years and between the ACT, College Readiness Standards, and other traditional measures of student performance, high school teachers have access to retired assessments, study guides, and numerous other materials designed to prepare students for success on these traditional assessments.

As a department, the high school department also needs to look very closely at these state and/or national assessments, the relative weight of the various skills in designing these assessments, and the level of complexity (Bloom or some other taxonomy) students are expected to demonstrate to prove mastery of the standard. Yes, let's look very closely at both the state and/or national assessments to be used and consciously use the materials already available to prepare students for success. Let's make sure to "close the loop" and do our level best to ensure the local curriculum, instruction, and assessments we use align closely to the national or state assessments measures to be used in determining our students' mastery of the intended curriculum.

This does NOT mean "teaching to the test" or some other apocalyptic conspiracy to destroy teacher creativity or academic freedom. It simply means that if successful students are expected to master this particular range of skills, then we, at the local level, will do everything in our power to align our local curriculum, instruction, and assessments to those skills. Much as I am sure we all hope when we think about preparing physicians to practice their craft - what skills are foundational to the effective practice of medicine, and ensuring those skills are mastered by those wishing to practice that profession. Our students are going on to university or careers that the country has judged requires these skills - let's make sure our students learn those skills.

**The Design Phase**

Now that the high school department has done its overall study/review of Domains and standards in those Domains and decided which specific high school courses will address which specific Domains and standards, the actual process of developing the end-of-year (Local CCS Standards or Priority Standards) and within-year (Instructional Objectives) begins.

This process looks much like it does in the K-8 area. Within the Geometry Domain (and all the other Domains, both in Math and ELA), Marzano's three step process is applied - Prioritize, Unpack, and Power the standards within the Domain to identify the most critical, most important learnings that ALL students must know and be able to do. As with the K-8 learning targets, these learning expectations are based on the CCSS themselves, the assessment system used to measure student mastery, and what local teachers, who have spent their careers devoted to kids and their own curriculum content know students must master. The reader may wish to look at those previous articles for a more complete discussion of this process. It is also imperative that those standards selected represent a learnable curriculum - that is, enough content (standards) is chosen that it can realistically be mastered by ALL students in the given time for instruction (about 180 days). (I taught my dog to whistle, he never learned it, but I taught it, should be kept in mind.)

Let's look at an example of this work. As with the previous article, I am not going to publish all the CCSS. Rather than list all of the CCSS for the Domain Geometry for high school, I would refer the reader to the CCSS website at http://www.corestandards.org/the-standards/mathematics to read the CCSS in the Domain Geometry for these grade levels. Doing the work discussed in this and the previous two articles, the staff in this example chose the following for their end-of-year Local CCS or Priority Standards: also note that the Domains Modeling with Geometry and Geometric Measure and Dimension are not included in the CCSS Domains chosen to be part of the Geometry course. Does that mean these Domains are not being addressed? Not necessarily. These Domains are either being addressed in other math courses or courses in other departments which more appropriately lend themselves to instruction in those skills from those Domains.

| | **By the end of Geometry, the student will:** | |
|---|---|---|
| **PS** | **Priority Standard** | **Domain** |
| 1 | Represent transformations in the plane; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). Develop precise definitions of key Geometry terms from the undefined terms point, line and plane. | Congruence |
| 2 | Use Algebra skills and established Geometry facts to solve problems involving the following types of lines and angles: Parallel and perpendicular lines, angles from parallel lines, vertical angles, complementary and supplementary angles. | Congruence |
| 3 | Use established Geometry facts to do proofs involving the following types of lines and angles:<br>Parallel and perpendicular lines, angles from parallel lines, vertical angles, complementary and supplementary angles. Use established Geometry facts to do proofs involving triangles and parallelograms. | Congruence |
| 4 | Right Triangles: Find missing side lengths of right triangles using Pythagorean theorem, its converse, and trigonometry (sine, cosine, tangent). Include special right triangles. | Similarity, Right Triangles, and Trigonometry |
| 5 | Quadrilaterals: Use the properties of quadrilaterals to find the value of the variable. | Similarity, Right Triangles, and Trigonometry |
| 6 | Perimeter and Area: Find area and perimeter of polygons (parallelograms, rectangles, squares, rhombuses, triangles, trapezoids, kites, and regular polygons) and circles. | Similarity, Right Triangles, and Trigonometry |
| 7 | Surface Area & Volume: Use Surface Area and Volume to solve problems (including prisms, cylinders, pyramids, cones, spheres and composite figures). | Circles |
| 8 | Congruent Figures: Identify congruent triangles (SSS, SAS, HL, ASA, AAS) and solve problems using properties of congruent figures. | Congruence |
| 9 | Similar Figures: Identify similar triangles (AA, SAS, SSS) and solve problems by using properties of similar figures. | Similarity, Right Triangles, and Trigonometry |
| 10 | Translate between the geometric description and the equation for a conic section, given: the center and the radius for a circle; a focus and directrix for a parabola, the foci and the sum or difference of the foci for hyperbolas and ellipses. | Expressing Geometric Properties with Equations |

These end-of-year learning expectations were coordinated with the entire Math Department, and the other Domains in the Geometry CCSS not addressed here are either addressed in other high school math or other department course work, or were judged to not reach the level of importance to be part of the learning expectations that ALL students must know and be able to do. The reader will

From these end-of-year learning expectations, within-year learning expectations are developed. Since this is a course-specific Domain, the learning expectations for the entire year will be shared with you here. Remember, in this system, Instructional Objective 01.1 is the first learning expectation of the first trimester, and 02.1 is the first learning expectation of the second trimester, and so on.

**Instructional Objective (End of Term Expectations):**

| Term | Instructional Objective Number | Instructional Objective (CCSS) | PS |
|---|---|---|---|
| 1 | Geometry-1.27G-CO-O1.1 | Know precise definitions of key Geometric terms/names based on the undefined terms, point, line, and plane. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.2 | Given the pre-image on a grid, graph the image under a specified translation, reflection, or rotation. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.3 | Given the pre-image on a grid, find the coordinates of the image under a specified translation, reflection, or rotation. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.4 | Given the pre-image on a grid, graph the image under a specified dilation and identify the scale factor. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.5 | Given the pre-image on a grid, find the coordinates of the image under a specified dilation & identify the scale factor. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.6 | Given the pre-image on a grid, graph the image under a specified composition of transformations. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.7 | Given the pre-image on a grid, find the coordinates of the image under a specified composition of transformations. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.8 | Determine if a given transformation would produce an image congruent to the pre-image. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.9 | Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.10 | Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.11 | Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-1.27G-CO-O1.12 | Specify a sequence of transformations that will carry a given figure onto another. (9-12.G-CO.1, 9-12.G-CO.2, 9-12.G-CO.3, 9-12.G-CO.4, 9-12.G-CO.5) | 1 |
| 1 | Geometry-2.27G-CO-O1.13 | Given a diagram of 2 lines (not parallel) crossed by a transversal with all angles labeled, identify the following angle pairs: vertical angles, adjacent angles, supplementary angles, complementary angles & (angle pairs for parallel lines)** (9-12.G-CO.1, 9-12.G-CO.9) | 2 |
| 1 | Geometry-2.27G-CO-O1.14 | Given a diagram of parallel lines crossed by a transversal with all angles labeled, identify ? angles and supplementary angles (some drawings are contextualized). (9-12.G-CO.1, 9-12.G-CO.9) | 2 |

| Term | Instructional Objective Number | Instructional Objective (CCSS) | PS |
|---|---|---|---|
| 1 | Geometry-2.27G-CO-O1.15 | Given a diagram of parallel lines crossed by a transversal with all angles labeled and with at least one label being a variable expression, write and solve an equation that matches the relationship shown in the diagram, and determine the missing angle measures. (9-12.G-CO.1, 9-12.G-CO.9) | 2 |
| 1 | Geometry-2.27G-CO-O1.16 | Given a more complex diagram with several lines crossed by transversal(s), name which lines, if any, must be parallel. (9-12.G-CO.1, 9-12.G-CO.9) | 2 |
| 1 | Geometry-3.27G-CO-O1.17 | Prove theorems about lines and angles. As an introduction to what is typically the most difficult skill for Geometry students, the proofs in this unit should be mostly intuitive, with relatively few steps and easily recognized justifications (reasons). (9-12.G-CO.10, 9-12.G-CO.11, 9-12.G-CO.9) | 3 |
| 1 | Geometry-3.27G-CO-O1.18 | Prove theorems about triangles. At this point, the proofs involve isosceles and equilateral triangles and the sum of the interior angles of a triangle. (9-12.G-CO.10, 9-12.G-CO.11, 9-12.G-CO.9) | 3 |
| 1 | Geometry-3.27G-CO-O1.19 | Prove theorems about parallelograms. At this point, the proofs involve the properties of parallelograms. (9-12.G-CO.10, 9-12.G-CO.11, 9-12.G-CO.9) | 3 |
| 2 | Geometry-4.27G-SRT-O2.1 | Find side lengths in right triangles using Pythagorean Theorem. (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-4.27G-SRT-O2.2 | Determine if a triangle is right, acute or obtuse by its side lengths. (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-4.27G-SRT-O2.3 | Find side lengths in 30-60-90 and 45-45-90 right triangles. (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-4.27G-SRT-O2.4 | Given a more complex drawing, find side lengths by using a combination of: special right triangles, Pythagorean Theorem, isosceles and/or equilateral triangles. (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-4.27G-SRT-O2.5 | Solving right triangles using right triangle trigonometry (sine, cosine, tangent) (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-4.27G-SRT-O2.6 | Solve word problems requiring right triangle applications (Pythagorean or Right Triangle Trig) (9-12.G-SRT.6, 9-12.G-SRT.8) | 4 |
| 2 | Geometry-5.27G-SRT-O2.7 | Find angle measures in polygons. (9-12.G-SRT.6, 9-12.G-SRT.5) | 5 |
| 2 | Geometry-5.27G-SRT-O2.8 | Given a fact about a special quadrilateral, name all the special quadrilaterals that satisfy the given condition. (9-12.G-SRT.6, 9-12.G-SRT.5) | 5 |
| 2 | Geometry-5.27G-SRT-O2.9 | Using the given measurements in a diagram of a special quadrilateral, determine the missing measurement(s). Some problems involve variable expressions requiring creating and solving an equation. (linear, quadratic or even a linear system) Quadrilaterals involved: all special quadrilaterals are used, including kites and trapezoids. (9-12.G-SRT.6, 9-12.G-SRT.5) | 5 |

| Term | Instructional Objective Number | Instructional Objective (CCSS) | PS |
|---|---|---|---|
| 2 | Geometry-6.27G-SRT-O2.10 | Determine and calculate area of triangles, parallelograms (including rectangles, rhombi and squares), and regular polygons (including composite figures) (9-12.G-SRT.6, 9-12.G-SRT.8, 9-12.G-SRT.5) | 6 |
| 2 | Geometry-6.27G-SRT-O2.11 | Determine and calculate area of trapezoids, rhombi, and kites (including composite figures) (9-12.G-SRT.6, 9-12.G-SRT.8, 9-12.G-SRT.5) | 6 |
| 2 | Geometry-6.27G-SRT-O2.12 | Determine and calculate circumference, arc length, area of a circle, and area of a sector of a circle (9-12.G-SRT.6, 9-12.G-SRT.8, 9-12.G-SRT.5) | 6 |
| 2 | Geometry-7.27G-C-O2.13 | Find the surface area of solids (including spheres) (9-12.G-C.5, 9-12.G-C.2) | 7 |
| 2 | Geometry-7.27G-C-O2.14 | Find the volume of solids (including spheres) (9-12.G-C.5, 9-12.G-C.2) | 7 |
| 2 | Geometry-7.27G-C-O2.15 | Find the volume of solids (including spheres) (9-12.G-C.5, 9-12.G-C.2) | 7 |
| 3 | Geometry-8.27G-CO-O3.1 | Apply properties of congruent figures (9-12.G-CO.10, 9-12.G-CO.7) | 8 |
| 3 | Geometry-8.27G-CO-O3.2 | Solve problems using properties of triangles and solve problems using special triangle relationships (equilateral and isosceles triangles) (9-12.G-CO.10, 9-12.G-CO.7) | 8 |
| 3 | Geometry-8.27G-CO-O3.3 | Prove triangles are congruent (SSS, SAS, ASA, AAS, HL) (9-12.G-CO.10, 9-12.G-CO.7) | 8 |
| 3 | Geometry-8.27G-CO-O3.4 | Solve problems using triangle congruence (9-12.G-CO.10, 9-12.G-CO.7) | 8 |
| 3 | Geometry-9.27G-SRT-O3.5 | Use proportions to solve geometry problems and to identify similar polygons (9-12.G-SRT.5, 9-12.G-SRT.2) | 9 |
| 3 | Geometry-9.27G-SRT-O3.6 | Prove triangles are similar using methods such as AA~, SSS~, SAS~ (9-12.G-SRT.5, 9-12.G-SRT.2) | 9 |
| 3 | Geometry-9.27G-SRT-O3.7 | Use proportions with a triangle or parallel lines to find missing lengths of figures (9-12.G-SRT.5, 9-12.G-SRT.2) | 9 |
| 3 | Geometry-9.27G-SRT-O3.8 | Use the relationship between the ratios of perimeter, area, and volume to find perimeter, area, and volume of figures (9-12.G-SRT.5, 9-12.G-SRT.2) | 9 |
| 3 | Geometry-10.27G-GPE-O3.9 | Find arc measures of circles (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |

| Term | Instructional Objective Number | Instructional Objective (CCSS) | PS |
|---|---|---|---|
| 3 | Geometry-10.27G-GPE-O3.10 | Identify and apply properties of segments that intersect circles (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |
| 3 | Geometry-10.27G-GPE-O3.11 | Identify and apply angle relationships in circles (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |
| 3 | Geometry-10.27G-GPE-O3.12 | Write equations of circles in the coordinate plane and find the center and radius of a circle (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |
| 3 | Geometry-10.27G-GPE-O3.13 | Write equations of parabolas in the coordinate plane and find the focus and directrix (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |
| 3 | Geometry-10.27G-GPE-O3.14 | Write equations of hyperbolas and ellipses in the coordinate plane and find the sum or difference of the foci (9-12.G-GPE.1, 9-12.G-GPE.2, 9-12.G-GPE.3) | 10 |

As with this or any other curriculum work, it is time-consuming and requires lots of coordination, articulation, and teacher-input as was discussed in the entire series of articles. If the district has done this work in the K-12 environment, there is now a complete set of end-of-year (Priority Standards) and within-year (Instructional Objective) learning targets K-12, and as discussed in those other articles, it is time for the Plan, Do, Check, Act cycle to ensure the documents as designed are as complete, appropriate, and rigorous as intended and will help ALL children improve.

**Closing Thoughts/Reminders**

All of this works and makes a major impact on improving student performance and teacher satisfaction, but please be reminded of the points made in the earlier articles;

- Education already knows how to do this work successfully. Please see the references cited and the work of Reeves, Ainsworth, Lezotte, Stiggins, and Schmoker and others.

- This is clearly a district responsibility. We cannot rely on teachers to do this work in isolation. The district must bring people together to do this work.

- This, like all the curriculum, instruction, and assessment work we do is a process. Create (or use) the process, follow it, constantly improve the process and do the work.

- Articulate the work between grade levels and courses. Make sure there is a nice flow to the learning expectations that is understood by all.

- You cannot apply systems thinking if you do not have a curriculum, instruction, and assessment system. Make sure to create, implement, continuously improve, and use such a system.

- Once this work is done, it is time to align your local assessments to your local learning expectations. VERY important work.

- The creation of within-year learning expectations (Instructional Objectives) is critical to ensuring teachers are teaching the same skills at about the same time and using their data to drive improvement, thus building a curriculum, instruction, and assessment system.

As some districts find it too difficult or disruptive to do this work from "scratch" during the school year, Partners4Results is now making this complete set of K-12 learning expectations available to districts interested in partnering to improve student performance through curriculum, instruction, and alignment. Others may simply do the work outlined in these articles and electronically create, edit, publish, and use these curriculum documents on their own. Either way, this process allows you to create useable, aligned, and articulated learning expectations that are proven to produce meaningful improvements in student performance. A sample of a complete set of K-12 ELA and Math standards in this format can be seen, used, and experimented with at http://www.partners4results.org/CCSS Try it out and see if you like it.

Feel free to contact the author at joe@partners4results.org to ask questions, see examples or discuss ways to do this work in your district. Thanks for all you do for children.

**References**


Ainsworth, Larry, Power Standards: Identifying the Standards that Matter the Most. ISBN: 0-9709455-4-X.

Ainsworth, Larry, "Unwrapping" the Standards. ISBN: 0-87120-717-6.

Crawford, Joe. Using Power Standards to Build an Aligned Curriculum: A Process Manual. Corwin, Thousand Oaks, CA (2011).

Crawford, Joe. Aligning Your Curriculum to the CCSS. Corwin, Thousand Oaks, CA (2012).

Hattie, John. Visible Learning for Teachers, Maximizing Impact on Learning, ISBN:978-0-415-69015-7, TJ International Ltd, Padstow, Cornwall (2012)

Hattie, John, Visible Learning A Synthesis of Over 800 Meta-Analyses Relating to Achievement, ISBN 10:0-415-47618-6, Routledge, New York, NY (2009)

Reeves, Douglas B. Making Standards Work: How to Implement Standards-Based Assessments in the Classroom, School, and District. Center for Performance Assessment, Denver, CO (1996-1998).

Marzano, Robert J., David C. Yanoski, Jan K. Hoegh and Julia A. Simms, Using Common Core Standards to Enhance Clasroom Instruction & Assessment, Marzano Center Teacher & Leader Evaluation

Reeves, Douglas B. Accountability for Learning. ISBN: 0-87120-833-4.

Reeves, Douglas B. Leader's Guide to Standards. ISBN: 0-7879-6402-6.

Schmoker, Mike. Focus: Elevating the Essentials to Radically Improve Student Learning, Association for Supervision and Curriculum Development, Alexandria, VA. (2011).

Schmoker, Mike. Results: The Key to Continuous School Improvement. Association for Supervision and Curriculum Development, Alexandria, VA (1996). (703) 578-9600.



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