CLASSROOM MODIFICATIONS

Category	Modification
TESTING	Open book/ open notes test
	Extended time/ multiple sessions
	Read test to student
	Provide study guide prior to test
	Allow student answered study guide
	Test in alternate site
	Allow use of calculator
	Allow retest on unsatisfactory tests
	Do not penalize for spelling
	Reduce multiple choice to 3
	Provide word bank
	Accept short answer or fill in
	Reduce # of matching at one time
	Shorten length of test
ASSIGNMENTS	Give directions in small distinct steps
	Give directions verbally & written
	Allow student to print
	Use assignment notebook
	Extended time NO penalty(1 day)
	Extended time NO penalty(1 wk)
	Reduce/ alternative assignments
	Allow extra credit opportunities
SEATING	Seating near teacher/ front of room
	Seating away from distractions
	Seating near positive role model
	Frequent position change
PRESENTATION	Note taker - copy and return
	Note taker - provide copy to keep
	Allow use of study guide
	Provide visuals when possible
	Cue verbally and visually
	Highlight critical info/ reading materials
BEHAVIORS/GRADING	Cue to stay on task
	Ignore inappropriate behaviors
	Maintain close contact w/ parents
	Maintain close contact w/ case mgr.
	Copy of progress report to case mgr.
	90-80-70-60 Scale
	Pass / Fail
OTHER	

Common Core Aligned Lesson Plan Template

Taken from: http://www.watsonmath.com

Subject: Algebra 1 **Grade:** 9

LESSON ELEMENT	STUDENT-FRIENDLY LANGUAGE (# 2,3,4 only)
1a. Common Core Math Content Standard(s) Addressed: A-SSE.2b Algebra – seeing structure 1b. Common Core Standards for Mathematical Practice(s) Addressed: Engage + Persevere	
2. Learning Target(s): (What will students know and be able to do as a result of this lesson?) • Students use double distributive square plot" • Discover product of two binomials • Discuss patterns involved in two binomials	
3. Relevance/Rationale: (Why are the outcomes of this lesson important in the real world? Why are these outcomes essential for future learning?) • maximize, equalize area • ~~factoring~~ key for future learning	
4. Formative Assessment Criteria for Success: (How will you & your students know if they have successfully met the outcomes? What specific criteria will be met in a successful product/process? What does success on this lesson's outcomes look like?) • summarize - find dimensions of Area $x^2+13x+42$	

5. Activities/Tasks: (What learning experiences will students engage in? How will you use these learning experiences or their student products as formative assessment opportunities?)

(2 min) ◦ Foiling warm-up (multiply binomials)
◦ Find area square

30 min

6. Resources/Materials: (What texts, digital resources, & materials will be used in this lesson?)

WS, calculators

7. Access for All: (How will you ensure that all students have access to and are able to engage appropriately in this lesson? Consider all aspects of student diversity.)

◦ group by ability level (group accountability (?) - group points)

8. Modifications/Accommodations: (What curriculum modifications and/or classroom accommodations will you make for Students with Disabilities in your class? Be as specific as possible.)

motivate to use x

	x^2	7
x	x^2	$7x$
5	$5x$	35

The Green Quad Subdivision Conundrum

Mac Mansion and Owen Money thought they had each purchased square plots of equal area in a new subdivision north of town. Mac went out and measured his plot and found it was, indeed, a square that was "x" yards on each side. Owen hired a surveyor to determine the area of his plot and was told the area was $x^2 + 12x + 35$ yards square.

Did they have plots of equal area? Explain your answer. (*You may use diagrams to help explain*)

No

Mac

	x
x	x^2

Owen

$x^2+12x+35$

$x^2 = x^2 + 12x + 35$

$0 = 12x + 35 \Rightarrow x = -2.9\ldots$

If $x = 1$

$x^2 < x^2 + 12x + 35$

$1^2 \stackrel{?}{=} 1^2 + 12 + 35$

$1 < 48$

Mac immediately went back to the subdivision developer and demanded that they increase the length of his plot by 6 yards on each side. How did he arrive at 6 yards? ?

	x	6
x	x^2	$6x$
6	$6x$	36

$x^2 + 12x + 36$

x^2	
	36

If they do as Mac asked, would the plots be equal in area? Explain you reasoning.

No

$x^2 + 12x + 36$ versus $x^2 + 12x + 35$

Is Owen's plot actually a square? Explain your reasoning.

No side lengths $(x+7)$ and $(x+5)$

What are the likely dimensions of Owen's plot (in terms of x)? Explain your reasoning. Use the back of this sheet to show your work in arriving at this answer.

Instructional Design Research Findings:

Instruction is using the learner's attention to foster learning.

1) Students have limited cognitive space for processing at any given time

- Extraneous processing should be avoided (Unnecessary "clutter")
- Essential Processing should be managed (Targeted "practice")
- Generative Processing (Long Term Memory Worthy)

2) Students learn best when they must "engage" with the material.

- Answer a set of questions that motivate a solution for the task
- Work in a group
- Explain verbally their thinking
- Construct questions that must be answered to complete the task
- Use an organizational method (outline, chart, graphic) to understand the task

3) Students want to know the reason for the task

- Task introduction should include the lesson objective
- Instruction should include foreshadowing of assessment methods
- Emphasis on "essential information" should be clear
- The place of the objective in a progression should be discussed

4) Students assess best when they know how they will be assessed.

- Have done sufficient essential processing (Retention)
- Have knowledge of likely assessment item types
- Have been encouraged to asked "assessment worthy" questions
- Have the ability to transfer knowledge (Understanding)

From: Applying the Science of Learning, Richard E. Mayer

Rantoul High School
CCSSM

February 13-14, 2013

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Al-ge-grams

- Simplify the following message in order to discover a hidden message. When possible, keep numerator letters in their original left-right order. It may be necessary at the end to rearrange a few letters or numbers to find the message.
  - The Algebra Teacher's Activity-A-Day, Thompson.

$$\left(\frac{4R}{U} \div \frac{W}{(JU)^2}\right)\left(\frac{ST}{2J} - \frac{ST}{3J}\right)\left(\frac{SA^2}{Y} \cdot \frac{Y^2N}{A}\right)\left(\frac{WO}{2R} + \frac{WO}{R}\right) = ?$$

Goals for Two Days

- Mapping the Common Core
  - Feedback and improve Algebra 1
  - Create Geometry and Algebra 2 maps
- Teaching the Common Core
  - Instructional shifts
  - Lesson Planning
- Prepare for Summer 2013 IMSP

High School Fluencies - Geometry

- Triangle congruence and similarity criteria.
- Using coordinates to establish geometric results, length and angle, and as modeling tools
- Construction tools, physical and computational, draft a model of geometric phenomenon, leading to conjectures and proof.

Model Content Frameworks, Nov 2012

High School Fluencies – Algebra 2

- Divide polynomials with remainder by inspection in simple cases.
- See structure in expressions and use it to rewrite expressions from advanced factoring to summing series to rational expressions and their end behavior.
- Translate between recursive and closed forms of sequences including applications of functions and problems in finance.
- Model Content Frameworks, Nov 2012

Create the Units

1. Name of Topic Standards: Duration:	2. Name of Topic Standards: Duration:	3. Name of Topic Standards: Duration:	4. Name of Topic Standards: Duration:
5. Name of Topic Standards: Duration:	6. Name of Topic Standards: Duration:	7. Name of Topic Standards: Duration:	8. Name of Topic Standards: Duration:

This becomes a timeline and pacing chart.

Lesson Study Professional Development Plan Rantoul

I. The Purpose
   a. Engage students
   b. Foster learning
   c. Provide opportunities for formative assessment
      i. Use activities during the lesson which provide information on what and how well students are learning
      ii. Use the information gained to improve instruction and learning
      iii. Assure that the information is useful for both teachers and students

II. The Process
   a. Plan the Lesson
   b. Observe the Lesson
   c. Analyze and Discuss the Lesson

III. Plan the Lesson
   a. What Research tells us
   b. The CCSSM Shifts
   c. A Template

IV. Design the Observation Instrument

Shifts in Mathematics

Shift 1	Focus	Teachers significantly narrow and deepen the scope of how time and energy is spent in the math classroom. They do so in order to focus deeply on only the concepts that are prioritized in the standards.
Shift 2	Coherence	Principals and teachers carefully connect the learning within and across grades so that students can build new understanding onto foundations built in previous years.
Shift 3	Fluency	Students are expected to have speed and accuracy with simple calculations; teachers structure class time and/or homework time for students to memorize, through repetition, core functions.
Shift 4	Deep Understanding	Students deeply understand and can operate easily within a math concept before moving on. They learn more than the trick to get the answer right. They learn the math.
Shift 5	Application	Students are expected to use math and choose the appropriate concept for application even when they are not prompted to do so.
Shift 6	Dual Intensity	Students are practicing and understanding. There is more than a balance between these two things in the classroom – both are occurring with intensity.

Standards Based Grading True/False Worksheet

True or False	RTHS is completely unprepared for standards based grading (SBG.)
True or False	A standards based grade book would be confusing to look at for parents and teachers.
True or False	Standards based grading would look the same in each class.
True or False	Standards based grading makes it easier to differentiate.

Sticking points: The stuff that you'll struggle with.

You have a giant steaming pile of standards. You're going to end up with a lot of stuff. You MUST narrow the curriculum. If you are morally against omitting or skimming certain standards, leave a comment and I'll try to convince you. I'm going to assume we all understand the necessity. I usually don't omit standards entirely. However, I definitely underteach some. We have a fair amount of test score pressure on us. Instead of deleting, a few standards have been relegated to mere vocabulary and one or two just get mentioned and not assessed. There will always be a few one-offs because of testing but try to minimize them as much as possible.

Grain size. This is probably the big one for most of us. It's a struggle between being specific enough that you and the student can make a decision based on looking at assessment results and the simple management aspects of having to assess and track dozens of standards. This has been a constant tweaking process. So far, the most helpful thing has been analyzing student errors. Problem areas and hard to break misconceptions should be broken down a little bit more. When solving the mathematical problems, like rate, students would have trouble with using the correct units. I separated that out into its own standard. On the other hand, I lumped the characteristics of the planets into a single standard. Students came in with a lot of background knowledge so I didn't feel the need to have a separate standard for each planet.

The 4.0. Getting it "just right" ends up being tough. For some topics, it comes naturally to me. Others I struggle with.This is directly related to my content knowledge of that particular topic. My most common problem is getting overly excited with something cool and just blowing my students away. This isn't the time to have your students try to explain the double-slit experiment. History teachers *really* like counterfactual thinking questions. Those are super hard and you really have to be willing to devote a massive amount of time to teaching students how to do that. When you think 4.0, think half-a-step-up rather than a full level. This is definitely a context-dependent decision. You've got to know your kids and know what you teach and value.

Over reliance on verbs. The taxonomies are definitely a good guide, however simply adding in a "justify" or "predict" doesn't guarantee deeper conceptual understanding. Focus in on the big ideas and work backwards, don't try to build up the pyramid. I've made that mistake before.

Pro Tip 1: Don't go chronologically. Start with the topic you feel you've got down pat. It's really hard to create a progression when you only have a surface grasp of a certain topic. The physics and chemistry portions were pretty clear for me. The astronomy stuff I'm completely unhappy with even now.

Pro Tip 2: Be explicit with your performance standards. I've got students that can calculate the speed of an object on a test. I've got students that can figure out how fast they can skateboard. I want them to be able to do both. Write it out as two different standards and don't assume that just because they can do one, they can do the other. They can't and you won't know that unless you assess it directly.

Pro Tip 3: These scales aren't just for your tests/grades. They should guide everything you do in class. You should be able to directly link everything you do in class to something on your topic scales.

I hope this has been helpful. I'm working from memory here so I reserve the right to edit this page at anytime. If something is unclear, ask. If you've got a better method or something to add, I'd love to hear it.

Good blog about Standards based grading:

http://alwaysformative.blogspot.com/2010/05/sbg-implementation-topic-scales.html

Science example: I have a topic called Atoms. The big idea is that all matter is made of atoms and that the existence of atoms can explain macroscopic phenomena. In the end, I want them to understand how temperature, pressure, and volume are related in a gas and the relationship between atomic motion, energy, and the state of matter. This is my 3. What do they need to know in order to get there? Well they've got to understand some basic vocabulary: matter, atom, solid, liquid, gas, pressure, temperature, volume. They've got to be able to differentiate between matter and non-matter. Since the 3.0 is centered around physical changes, they'll also need to know what properties of matter can and cannot be changed. They need to know the molecular motion of different states of matter. Those become my 2. For my 4, I ask them to explain certain phenomena that we haven't explicitly address in class. So we've talked about evaporation, but not condensation. We've learned previously why things float or sink, so I ask them to explain why a hot air balloon floats.

Non-science examples: **Warning**, my knowledge in these other areas kinda sucks so please don't flame me for getting some specific facts or terminology wrong.

Math example: For Kate Nowak's regression unit, Modeling or Regression would be a natural topic. The big idea might be that data can be modeled and then extrapolated using mathematical formulas. Kate might want her kids to be able to look at a graph and write a formula modeling the data. This is her 3.0. Going backwards from there, what do the kids need to be able to know in order to do that? Well it looks like they'll need to be able to identify different types of models. They need to be able to set up a graph. They need to be able to qualitatively explain what's going in the graph. They need to interpret different variables and constants. What would her 4.0 be? In our school we're asked to write across content areas so I naturally default to writing at this point. Perhaps she can give them a messier or incomplete data set and have them model it and justify why they chose that specific method. She may ask her students to create general rules for when to use each regression. She could ask them to identify specific examples of say, exponential growth, that weren't taught in class. Then gather some data and model it.

Social Studies example: My big idea might be how the US government maintains a system of checks and balances using three branches of government.[3] I want them to understand the historical roots for this system and how each system has served to enact change in their own way. What do my students need learn? They'd need to learn the basic functions of the three branches. They'd need to learn a few historical examples. 4.0? Students might be asked to contrast our system with a bicameral system. For higher level students you might use one of your historical examples and have them imagine how it might have played out differently with a different system of government.