dy/dan

less helpful

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The Comprehensive Math Assessment Resource

August 31st, 2007 by Dan Meyer

Due to time constraints in my corner of the world (school started a week ago) I'm gonna have to shelve my typically softspoken online persona and get straight to it. If you'd like to see assessment amount to more than a meaningless exercise in classroom control, if you'd like to see cheating drop and confidence rise, if you'd like to see a higher correlation between the grade you feel a student deserves and the grade on that student's transcript …

… take something from this page.

How Things Used To Be

1. **Textbook manufacturers directed assessment**, issuing lengthy tests at the end of their chapters, tests long enough to both intimidate students and make their percent grade totally indescriptive of what they know and don't know. (i.e. two months down the line, what does a 67% on "Chapter 6 Test" really mean?)
2. **Assessment was the same for every student** with every student receiving the same test no matter how many times they'd demonstrated competence on an assessment.
3. **Students hated tests.** They complained about them. They scheduled absences around them. They cheated on them. And who could blame them? The tests covered broad chunks of texts, with trick questions seeded every few pages. If you did poorly on a test there was little ability or incentive to improve. The class moved on.

How Things Are In My Classes

1. **Learning directs assessment.** Learning breaks across *skills* not chapter units. Instead of assessing at the end of chapters, we assess at the completion of a significant skill. Instead of lumping all the skills together under one grade (making that grade useless beyond a "did good" or "did bad" level) we track each skill separately in our grade book.

2. **Assessment is different for each student.** Once a student demonstrates competence in a skill, once on a basic problem and then on a hard problem, she achieves "mastery" and can skip that skill on every test thereon.
3. **Students *like* assessment.** Most do, anyway, and I'm not even playing with you here. Students *like* the process. They *know* which skills they need to improve (because we track them separately — me and them, both), they *know* how they can improve them (by studying or coming in for tutoring), and they *know* they'll be rewarded for their efforts (I'll increase their skill grade in my gradebook if they demonstrate improvement).

The Timeline

1. **You teach.**
2. **As you teach, you try to sense when you've hit the end of a self-terminating *skill*.** This skill shouldn't be so small (e.g. "Adding Numbers") that you'll be tracking ten such concepts on a week but not so big (e.g. "Factoring") that you can't tell how to remediate a low grade. In Algebra 1, "Integer Operations" is my first self-terminating skill.
3. **You write a test (here's the template) of either three questions or six,** depending on how much you want to grade that week. Handwrite them or pull the template into your editor of choice. You'll number the first test of the semester 1, 2, 3, 4, 5, 6, but you'll number the last test of the semester 19, 20, 21, 22, 23, 24, depending on how many skills you pull out of your semester. This is to say, the test numbering is continuous throughout the year. The test numbering is *very* significant.
4. **You grade the test on a four-point scale.** 4 is perfect. 0 is blank. The rest is at your discretion.
5. **You enter the tests into your grading program.** The possible points for every concept on this first test is 4.
6. **You pass the tests back.**
7. **The students record the new concepts and their scores on their Concept Checklist.** (Template here.) They have now started a self-monitoring process which will continue throughout the year. This is one of the most beautiful parts about this system, that every student knows exactly what she does and doesn't know. [**2011 Aug 26**: here are my most recent thoughts on the concept checklist.]
8. **You teach some more.**
9. **You give another test.** Perhaps here it's concepts 2, 3, 4, 5, 6, 7. The pace is such a specific thing between you and your class. Any question they're seeing for a second time, though, give 'em a harder one. Add terms. Use negatives. Make the problem about trinomials rather than binomials.
10. **You grade** but this time you add only *one* new entry to your gradebook. That's #7. You keep the rest. You keep the rest and you change their possible points to 5. Now, as you go through, you overwrite low scores with higher ones. Grades that drop (and there will be some — the problem was harder, after all) stay the same. If a student pulls a second 4, you enter in a 5.
11. **You pass the tests back.** The students write down the name of #7 and start penciling in new scores next to old ones. If a student has a 5 on a concept, they call you over and you put a stamp or a signature next to that concept, telling them they're done.
12. **You keep going.**

The Handouts

1. Blank Test
2. Blank Concept Checklist
3. Algebra 1 Concept List (suggested)
4. Algebra 1 Sample Tests
5. Geometry Concept List (suggested)
6. Geometry Sample Tests
7. Precalculus Concept List (suggested)

8. Precalculus Sample Tests

Frequently Asked Questions

1. **Don't students try to game the signature/stamp process?**

   Nothing that happens when I'm out stamping changes the grade in the district's computer. A kid could claim two 4′s and I could stamp her paper in error, and nothing would happen to her grade. The stamping process is entirely for the students, so they can take ownership in the process and have a document in *their* hands that describes *their* learning. (Still I ask to see both 4′s before I stamp.)

2. **How do your class grades break down?**

   70% – Tests (strictly limited to these concept quizzes — no other assessment)
   10% – Final Exam (assigned exactly once per term)
   20% – Classwork/Homework (everything else)

3. **Once a kid has mastered a concept or skill, don't they just forget it?**

   Do kids forget? Yeah. But that's the nature of the thing. Everyone forgets everything given enough time. But with a system of objectives this clearly defined, can I pull them back quickly? Absolutely.

4. **How do you break the curriculum down into concepts? There's gotta be hundreds.**

   I've found it to be the hardest part of this system. My list has flexed every year so far.

   I could write a post describing the slashing & burning process but the hardest work is done internally. You've gotta convince yourself that you don't need to test absolutely everything.

   Some concepts are great for classwork, for exercises, good for in-class formative assessment, but don't need to show up on a summative test.

   You then merge topics where appropriate (being careful not to make 'em too large, unmanageable, or ungradeable) and write the rest off.

5. **How often can a student re-take a concept/skill test?**

   As often as she wants. She can come in at lunch or before school or after school. I don't let her re-take the same concept twice in a day, though. Gotta draw a line somewhere on the issue of rote, temporary memorization. [**2011 Aug 26**: Someone — I forget who — said they allow students to either retake a concept or get tutoring in the concept but not both in the same day. That seems really, really wise to me.]

Earlier Posts

1. How Math Must Assess, the PDF treatise that got things going on my campus.
2. How To Assess, the practical implementation.
3. The Presentation, a talk I gave to the faculty about all this.
4. Assessment Part Deux Redux, some notes on the risk-reward cycle.

Testimonial

Tina:

I started this at the beginning of this school year and I have to say that this is the most profound change my classroom has ever undertaken and I am very impressed with how it is going. The concept checklist has been a very important tool in terms of communication between school and home. I made a big deal of it at back to school night and told the parents to check their students' orange folders (that's where I have them keep all their sbg stuff) often. The parents love it and I can tell they are keeping an eye on that folder from the types of emails I am getting. It is better information on their kids' progress than they have ever gotten before.

2011 Oct 19: Christopher Danielson wrote up some provocative thoughts on students with ongoing mechanical errors receiving 60%.

221 Comments »

221 Responses to "The Comprehensive Math Assessment Resource"

1. *on 31 Aug 2007 at 11:22 am*1 *Karen janowski*

   This post makes it official – you are a teaching genius, not to be confused with a mensa genius.
   This is brilliant – how do you find your students respond as this is so drastically different from anything they've ever seen? They understand what skills they need to concentrate on and you are truly building on foundational skills.
   Students can't fail (and why should they because to me a poor grade oftentimes reflects poor teaching).
   I will pass this along to the math teachers in my district.

2. *on 31 Aug 2007 at 11:31 am*2 *ken*

   Impressive, most impressive (I've heard that somewhere, DeathStar or some place like it).

   Thanks for sharing. In the true interest of sharing, I look forward to directing my math teachers (and really, my entire faculty) to this post.

   I am always amazed that there are educators complaining about time: time to reflect, time to redesign lessons & curriculum, time to grade, etc… yada-yada, so on and so forth.

   Then, they "marvel" with satirical contempt that I have time to not only read blogs, but also write one.

   They should sit down and talk to you (if, perchance, they could find some time). You sure seem to model the qualities of a (pick one, or all):

   1. quality educator
   2. life-long learner
   3. 21st Century educator (Is that similar to #1 or totally separate??? I am always confused about this.)

   And I totally agree with you; just about everyone forgets everything if given enough time.

   What was your post about again?

   Forgetful me.

3. *on 31 Aug 2007 at 12:54 pm*3 *Mike*

   Dan,
   And you let students retake the individual concept tests as often as they want, correct?

Mike

4. *on 31 Aug 2007 at 1:35 pm*[4] *Tony Lucchese*

   You are my hero, sir. Do you happen to have a graven image that I may worship?

5. *on 31 Aug 2007 at 1:38 pm*[5] *Tanya M.*

   Hello, Dan,

   I discovered this blog shortly before school started, and I want to thank you for all these great ideas! The first day of school was last week (8/20), and I decided that I would try out this assessment method with my precalculus students. I've given them two quizzes already. The kids love the method so far. They've told me they appreciate that they can learn at their own pace. And I love knowing exactly how each student is doing just by glancing at my grade book!

   Keep up the great work!
   Tanya Mills

   P.S. I modified your course policy sheet for my class, and it was the smoothest and easiest and least boring presentation of class rules ever.

6. *on 31 Aug 2007 at 2:14 pm*[6] *J.D. Williams*

   The district I work in does standards based grading. We have a list of concepts, and we grade individually on our report cards by each concept. I'll see if I have the sixth grade list of topics to share on here. I have the larger one with all the power concepts on it, but they gave us hard copies that are easier to list out. I'll email about a digital copy that I can share.

   Dan, thanks for the templates. Those will definitely come in useful. I should be keeping my gradebook a lot different than how I am now.

7. *on 31 Aug 2007 at 3:25 pm*[7] *H.*

   Thanks for posting the actual concept lists and sample tests, too! Gave my first quiz of this kind today. My list of concepts is already rather long for two weeks – will need to work on pruning the list.

8. *on 31 Aug 2007 at 4:41 pm*[8] *Jenn*

   My math department has a similar concept grading system. Four point scale, but if they go down we average the score. Student must keep the score above 2.8 to be considered "passing." The idea being that you're not allowed to just memorize "sum of cubes" for two weeks and then blow it off for the next two months of the semester. If a score goes up, they get the new higher score. Once students realize how much of an impact their essential skill scores have on their grade (40% skills, 20% raw test score), they are more motivated to go for 4s.
   Enjoy the long weekend!!!

9. *on 31 Aug 2007 at 4:51 pm*[9] *Jenny*

   Thanks for this – especially all the links to previous posts and the templates and tests. You have given me a lot to think about as we head into this long weekend. I stopped giving tests (almost completely) a couple of years ago because I had many of the same concerns that you have noted about the textbook tests. I am seriously considering your system.

Thanks for this blog. Your posts either give me a lot to think about or make me smile (or both). Either way, it is always worth reading.

10. *on 31 Aug 2007 at 7:29 pm*[10] *dan*

    Thanks, **anyone**, for passing this along to the math teachers within your locus. Anyone feel like donating a link back to this, I'd be much obliged.

    Mike, short answer: yes. I added a longer response to the FAQ portion of the show.

    Tanya, real glad to hear that some of this stuff is making life easier for you. I added a list of precalculus concepts and their assessments, for whatever good that does you.

    J.D., you get a chance to share that list, be sure to let me know. Real interested in how younger grades do this.

11. *on 31 Aug 2007 at 7:31 pm*[11] *dy/dan » Blog Archive » How Math Must Assess*

    [...] [Do check out the comprehensive resource.] [...]

12. *on 31 Aug 2007 at 7:32 pm*[12] *dy/dan » Blog Archive » How To Assess*

    [...] [Update: check out the comprehensive resource.] [...]

13. *on 31 Aug 2007 at 7:33 pm*[13] *dy/dan » Blog Archive » The Presentation*

    [...] [Update: check out the comprehensive resource.] [...]

14. *on 31 Aug 2007 at 7:33 pm*[14] *dy/dan » Blog Archive » Assessment Part Deux Redux*

    [...] [Update: check out the comprehensive resource.] [...]

15. *on 31 Aug 2007 at 9:15 pm*[15] *J.D. Williams*

    Dan, not sure if I'm reading this right, but when you give an assessment the students also get all of the past assessments that they haven't received a "5″ on yet?

    Now to share.
    First is my districts benchmark power concepts for 6th grade. (If anyone wants any other K-8 grade levels, email me: jwilliams {at} gesd40. org)
    http://gesdmath.wikispaces.com/space/showimage/6th-grade-power-concepts.xls
    The good thing about his one is that it's broken down to the chapters in the curriculum we use.

    Next my 6th grade strands and concepts broken down. This is the one that I would use to choose what I would assess. (Any of the misspellings are mine, I had to re-type out this because I only had a hard copy).
    http://gesdmath.wikispaces.com/space/showimage/Standards-based-strands-6th.xls

    I'm hoping those links will work from Wikispaces.

16. *on 31 Aug 2007 at 10:42 pm*[16] *The 25 Hour Day » 1st Day of Spring*

    [...] materials they create on public blogsites? A good example of teacher-designed materials is "The Comprehensive Math Assessment Resource" by Dan Meyer who constantly publishes lesson ideas that he uses in his classes. This kind of [...]

17. *on 01 Sep 2007 at 2:41 am*17 *jeffreygene*

    dan – thinking out loud – do you think there is any reason that this sort of approach couldn't be adapted for other subjects? do you know of anyone else doing something like this in other subjects?

    i teach IB middle years humanities, and students are marked on their "knowledge, concepts, skills, and organization/presentation". perhaps it would make for a nightmarishly long gradebook, but i wonder if each of those categories couldn't be broken down into something like what you've done in maths…or perhaps develop a model which factors in essays / projects as a major source of the final mark?

    thanks for sharing! again i find myself admiring/coveting your ability to write frequent clever / tongue in cheek posts that leave me thinking about how to improve my own practice.

    cheers,

    -jp

18. *on 01 Sep 2007 at 9:50 am*18 *dan*

    J.D., lemme see if I can clarify. Every student gets the same paper exam on her desk. It contains six problems, some of which Student X has passed. She crosses those off and completes the rest.

    Thanks for posting those links, too. Worked fine on my end.

    Jeffrey, it's always been a thought. I think a science teacher is gonna make a run at it this year but when I gave my faculty presentation last year, the goal was total campus-wide domination. A four-point scale just doesn't lend itself so hot to abstract test questions, though.

    Most crucial to any grading system, in my opinion, is respect for the individuality of learning. A kid might learn how to diagram a sentence or she might learn how to pick apart the themes of The Crucible looonnng after the rest of the class passed by the test.

    There *has* to be some system in place where she can come in, demonstrate that knowledge, and see her failing grade for "The Crucible Theme Test" disappear.

19. *on 01 Sep 2007 at 10:50 am*19 *Chuck*

    Dan – I like the system, plan to implement it into both my algebra classes this year (my first year as a teacher) and will pass it along to other forward thinking math teachers.
    I wondered about using an error analysis routine as a way for students to reflect on their mistakes and improve the grade they received for a concept…Do you think there is room in this system for that, or would you recommend applying the error analysis points towards the homework/participation grade?

20. *on 01 Sep 2007 at 10:45 pm*20 *andbrooke*

    I'm with jeffreygene- how could I apply this to an English curriculum? I'm having trouble applying it to reading and writing skills, but it would probably work very well with grammar concepts. I'll work on it and see what happens.

    I just found your blog. I like it. Thanks for tip.

21. *on 02 Sep 2007 at 6:43 am*21 *Todd Seal*

There has to be a way to make that failing grade disappear… within the same semester. My administration has just proclaimed that second semester performance may not impact first semester grades. So if a kid figures out that thing about *The Crucible* in June and we covered the text in November, tough luck. Also, there's a finite number of themes in any text, so, in an English classroom, what's to prevent a kid who didn't pass the concept test from getting the answers from the kids who did pass?

Beyond the most basic ones, reading skills do not break down into discreet, measurable concepts. I don't think writing skills break down like this, either. As skills become more complex and/or subjective, there are as many "correct" answers as there are prompts. There isn't a series of steps that *always* leads to successful reading or writing that can be applied to any situation.

Still, maybe this grading is possible for certain areas of an English teacher's curriculum and essays are something we still have to assess holistically, using a rubric, etc. Not saying I like it, approve, or think it's a good idea, but does this suggest that all essays can be re-written at any time? Students should be allowed to demonstrate their knowledge even after the rest of the class has moved on, right?

22. *on 02 Sep 2007 at 8:58 am22 Jason*

    Re. Todd's reply to dan at 18: Probably the answer is to look for general skills, not skills applied to a specific book. You can only ask "what are the main themes of The Crucible?" once, but you can ask "what are the main themes of this book?" once for every book you read. So the student who can't find themes in The Crucible to save her life can redeem herself when you give The Scarlet Letter Theme Test. It's not the individual assignment that gets a grade, it's the skill, whether the skill be "find the theme" or "write an essay explicating a poem" or "read 100 pages of a book over a weekend, with reasonable comprehension". You needn't re-give exactly the same assignment over again, I don't think.

    (Unless the skill you want your students to learn really *is* some factual-knowledge question like "know the themes of The Crucible", in which case it doesn't really matter if they learn the themes by rote memorization of other students' quizzes, does it?)

23. *on 02 Sep 2007 at 9:29 am23 Mindy*

    I'm doing this (sort of) with all subjects in an elementary classroom. I'm attaching a link to a flickr snapshot of my gradebook, made using Numbers in iWork.

    Some were asking about how to writing this way. The photo is snapshot of my writing gradebook for first quarter. The standards that you see in the snapshot may not be the ones I "use" this quarter. That will change as I see what the kids need, but it will give you an idea of how I set up standards based grading.

    This has evolved from what I did last year, so this is my testing year for this exact method. If anyone sees any issues, let me know!! That way I can tweak before running into snags. :)

    http://farm2.static.flickr.com/1265/1304962624_b9846b12af_o.jpg

24. *on 02 Sep 2007 at 9:30 am24 Mindy*

    The link above only links to the image. This link (I hope) links to the flickr page so that you can see the notes I made.

    http://www.flickr.com/photos/28642183@N00/1304962624/

25. *on 02 Sep 2007 at 11:47 am25 Todd Seal*

Jason, that's exactly the trouble I was trying to point out in the second paragraph of my comment. I dare say that finding a theme in *The Crucible* is much easier than finding a theme in *The Scarlet Letter*, if for no other reason than because of the complexity of the syntax in the latter, never mind the complexity of the plot. Also, notice that it's *a* theme, not *the* theme, which gets at the trouble of subjectivity here. Identifying a more sophisticated theme, one that's hidden a bit further down and perhaps is found only through monumental reflection and consideration, is not the same as identifying something as surface level as "the struggle between good and evil."

In English, basic skills might be broken down like this. I just have a hard time applying this to reading and writing, particularly with grade-level students. This is trouble I echo over and over: English is a subjective course, filled with shades of gray instead of right and wrong answers. There are no steps to follow that lead to the right answer every time. So demonstrating the ability to find theme in this story isn't the same as being able to find it in this other story by virtue of the differences between the two texts.

I've been thinking this over for the past several months. Maybe students write in an effort to show mastery of certain skills and that's all I look for in that read. But, what… once a student shows that she can "use language in natural, fresh, and vivid ways" (Writing standard 1.5), she doesn't need to exhibit that skill again? Once a student can correctly "analyze an author's implicit and explicit philosophical assumptions" (Reading standard 2.5), he doesn't need to do so in the future? When I evaluate the last piece of writing, I'm evaluating many of the same skills I evaluated on the first piece of writing, plus several more. I need to repeatedly know that students can correctly make subjects and verbs agree in number. There's never a time a mistake like that can pass by. So the number of skills I'm assessing in writing is always growing and I'm rarely "finished" assessing a certain skill. I dunno, maybe I should be at some time for some students.

26. *on 02 Sep 2007 at 2:48 pm*26 *jeffreygene*

Jason, Todd – don't think I can reply to all of your excellent thoughts. Thanks for keeping this thread going! Here are some thoughts that you've triggered in my brain.

Just wanted to pick up on Todd's comment – "rewrite essays at any time". I did that last time I taught high school English. The rule was that you can keep on working on any essay you like at any time (up until until two weeks before the end of the term). Still not sure if I should have kept the best overall grade or done an averaging between the worst and best.

I liked this because it meant that sometimes I could simply hand a poorly written piece back to a student with "Incomplete" on it – forcing them to rewrite it until they showed they had met the basic requirements.

I think the key is to mimic the function not the form – students are in charge of their grade, they know exactly where they are, and exactly how to improve. Rewriting essays allows for that.

Thanks for sharing folks.

-j

27. *on 02 Sep 2007 at 3:56 pm*27 *Todd Seal*

Yeah, for several years I did essays that way. As long as students made a first attempt by a certain date, there was no such thing as a "late" essay. Show me a paper on the due date and tell me you don't want to hand it in right now. I mark it down that an essay was present and you take your time with it. I had some students to whom I handed back essays repeatedly. And I also accepted papers up until 2 weeks before the end of the semester. I'd keep handing papers back for rewrites if they were below 70%. I didn't

accept anything that couldn't demonstrate at least minimum competency. This might be the primary way to keep students in charge of their grade as far as writing is concerned.

Attempt the essay as many times as you want, but it stays at 50% in the gradebook until the rewrite hits at least 70%, when I update the score. Hmmm… there's still time for me to do that this year. I haven't assigned a piece of writing yet. I did something similar to this with in-class timed writing last year and I liked the result.

If this is the way you're going to do it, you have to keep the best overall grade, not an average.

28. *on 03 Sep 2007 at 6:31 am*28 *TMAO*

Reflexive Objective Mastery Assessment Practices in English/ Language Arts Classes

Yes. It works.

Grammar fits without any trouble at all. Break down the skills, track Mastery, provide opportunity for assessment. Take much of what Dan outlined and substitute complex sentences for evaluating single variable equations. I have template-based five-question quizzes, that proceed up Blooms from definition to application. I operate on a four-tiered system (1,2,3,4), where students are expected to score a 3 — Master level. Level 4 is reserved for authentic assessment of work product. I assess writing in double-secret ways for previous grammar skills. Dig it, I'm grading the essay on structure and content, and have chosen 1-2 grammar skills (past tense verbs, use of prepositions, etc.) If they use and apply, the get a 4 on those skills — PhD level.

I teach the component parts of an essay in the same way: Intro, thesis, reason/argument, explanation/elaboration, transitions, citations, etc. Kids chart out what they've already been successful in and where they need to focus. [And for those who struggle with that stilted prose in 10th grade, remember that bad high school writing is exactly the same as good middle school writing]

I teach ELLs who struggle with reading, so high emphasis is placed on the application of various meta-cognitive reading strategies (questioning, predicting, visualizing). Kids are assessed in three different ways, assigned points, and track progress toward Mastery on a big ol bar graph.

The higher level lit analysis stuff is more problematic, but the key here is multiple opportunities to gain mastery. This does not necessarily mean kids are trying to assess theme of The Scarlet Letter over and over again, but it measns they're trying to assess the theme of SOMETHING, over and over, receiving feedback on how they're doing, and eventually placing a certain skill or analytical tool into the lockdown box of I've-got-it. By the end of the year, kids tailor their own reading/ analysis program based on past performance. Everybody is reading the same thing, but Osvaldo's making text-to-text connections and analyzing conflict, Lupe's questioning, visualizing, and looking at theme, while Tania's writing an essay comparing the treatment of women charaters across the last three novels. This level of differentiation is thus brought about not about feelings or murky inclinations, but rather the hard data of past performance and the clear necessity of what needs to come next.

29. *on 03 Sep 2007 at 7:57 am*29 *Todd*

Except too many E/LA standards are written with "feelings or murky inclinations." Language Arts implies that a certain degree of subjectivity is inherent. We're quite often assessing good writing and that's different than correct writing. Again, there are no concrete steps to follow that will always result in better reading or writing. There are as many possible steps to follow as there are texts and as there are readers/writers.

Some of my students might need to predict when reading the current text. So am I to assign predicting to those 10 students who I think need it and the other 20 get something different? That's a nice idea, but I cannot differentiate for 160 students. I'm human and I have limitations.

Maybe we start with a checklist and everyone has to predict, etc. until they show they can do it at the drop of a hat. Then they are done and they move to another reading strategy. Pop quizzes on the previously covered strategies are possible at any time. Are there forms students have to fill out to show mastery of different reading and writing strategies? Can these kinds of skills be captured in a universal form? Maybe it's that the homework is to predict with the current text. Then, there's a test in class using a different text and students show their predicting skills (that they've ideally practiced on the homework). Or write a thesis. Or use evidence to support an argument. Or revise to improve style. But do standardized objective test items actually encourage better writing? I haven't seen anything to make me believe that.

30. *on 03 Sep 2007 at 8:49 am*[30] *TMAO*

[did this comment already go through?]

Hi Todd, don't drive angry.

You wrote: "We're quite often assessing good writing and that's different than correct writing."

Fantastic, assuming your students arrive with the ability to write correctly — I'm assuming you have no qualms about defining and conceptualizing correctly, right? My guess is, most teachers don't have quite the luxury, which is why this approach tends to make more sense. Me, for example. Here's a random response to literature diagnostic, quoted completely:

"In the history there a girl and her Family. Then They see a hot-air baloons rides but the girl when she is in the hotel she thinking and the baloons then she feels panic, and she don't wants togo in the an she go and she liked."

Yar! I got some work to do there, because the state writing exam is in March, and homeboy's gonna have to do a lot better. If you don't have to teach kids like this, or really anyone like them, to write correctly, mazel tov, and maybe this approach isn't right for you.

You wrote: "Again, there are no concrete steps to follow that will always result in better reading or writing."

That word "always" is sticking out like one of those tiger-traps covered with leaves. If we change that "always" to "more often than not," "most of the time," or "almost always," we can agree that you wrote something pretty silly, right?

As for your 3rd paragraph, I was digging it. Break those murky standards down into teachable/ learnable chunks. Teach, assess, monitor, remediate, differentiate. That's some hard-hitting shit right there. But then you went off and started in on the standardized blah blah blah and everything went off the rails. No one's talking about the Big Bad in May. Assess how you want, but do so on discrete units of instruction, communicate the importance of high-level Mastery, and provide opportunities for reteaching and relearning. While I understand that writing is an art-form, and all high school writing approaches this level of art, I assume you communicate some standards or means of differentiating the betterness you spoke of earlier. Assess on those measure of betterness and differentiate accordingly.

These are the things that facilitate the development of more compotent readers and writers.

31. *on 03 Sep 2007 at 12:56 pm*[31] *Todd*

    Who's angry? I'm enjoying this.

    Silly? Nope. Tell me the steps that "more often than not" lead to better reading or writing in mainstream students. I don't know what those steps are and they would certainly help me create those forms I questioned the existence of in that third paragraph of mine you enjoyed. I don't mind if I'm silly because an answer to this one would be huge; if we have steps to produce better reading and writing, those are really steps to produce better thinking. Honestly, I don't know of anything that I can hand to 9 students out of 10 and have them become better thinkers as a result. I'd even take 4 out of 10.

    I am lucky in that I teach junior English (mostly). By the time kids have made it to me, they come with the ability to write correctly, though profundity and sophistication are quite often lacking. Students with lower writing skills usually are siphoned off to other levels of English (comp&lit, repeat classes, ELL, Read180, etc.).

    And in that third paragraph I wrote earlier, I wasn't talking about "the big bad in May," either. I was talking about test items that are "aligned to standards." I meant "standardized" more literally than is used in most teacher conversations. Sorry for the slip up. So you take something like "can write a thesis statement" and turn it into an objective test item. The ability to pick a strong thesis out of a line up does not mean the ability to create a strong thesis from scratch. Those are two different skills and I don't think working on the one necessarily improves the other. Just like correcting grammar mistakes on a worksheet does not mean the student can correct those same mistakes in his own writing.

32. *on 03 Sep 2007 at 1:03 pm*[32] *H.*

    Do the students complain when they realize that their old score of a 3/4 = 75% will suddenly drop to a 3/5 = 60% if they *don't* improve on the second assessment?

33. *on 03 Sep 2007 at 1:16 pm*[33] *dan*

    Yes, absolutely. Many do. So I make sure that first 3/4 (a near miss on a *basic* problem) is as close to my mental image of D-level performance as possible.

34. *on 04 Sep 2007 at 10:14 pm*[34] *Rick Scheibner » Bookmark Meme*

    [...] dy/dan Blog Archive The Comprehensive Math Assessment Resource Dan's posts about assessing math students is some of the most well thought-out [...]

35. *on 04 Sep 2007 at 11:18 pm*[35] *Per*

    I use a similar system. I have a big number of standard problem that all need to learn to pass my class. They can retake test on those untill they get it right. When they pass one concept I will not make them take a test on it again. I am thinking about a system when you need to pass it twice in a row since i see a problem with to many forgetting the skills.

    To get a higher grade the students need to be able to combine the skills from two or more standard problem in a several step solution and for the highest grade they need to be able to use the skills on problemtypes I havent really showed. They have to show they understand the ideas enough to adapt to a new problem type.

    On the problems that probe for higher grades I give myself permission to use any concept we have done so far in the course even if the recent onces are testet more.

I do not let students retake test for my higher grades. If I have problem deciding between two grades at the end of the course I normally let those students take one last exam to decide the grade.

/Per

36. *on 07 Sep 2007 at 12:24 am*[36] *Clif*

    I used a slightly similar approach in my math classes with a great deal of success. Thanks for sharing this with everyone. You've provided food for thought.

37. *on 17 Sep 2007 at 9:46 pm*[37] *Scaffolded Writing Assessment: Thoughts On Teaching*

    [...] Taking a page from Dan, the next time I assess ability to list evidence to defend an opinion, this grade will raise to and stay at 50 points. Students will have the chance to improve this score at any time during lunch based on a new topic I give them. [...]

38. *on 24 Sep 2007 at 6:03 pm*[38] *Sara*

    Our school uses a similar system, but we have abandoned points and percentages all together. In listing out these concepts we decided that some of them were VITAL to a student being successful and moving forward. These are called "essential". Students have to demonstrate proficiency on these skills to earn a passing grade. (We score on a Not Yet, Working Towards, Proficiency, Mastery scale).

    The other skills are called "advanced" and the requirements for them vary depending on whether the student wants to earn an A, B, or C.

    Part of my personal reason for going to this system is that I believe that percentages hide what students don't know and allow them to move through the system with holes that are never filled. This way both the students and I are held accountable to fill the holes. (Maybe this is especially an issue in math?)

39. *on 01 Dec 2007 at 12:11 pm*[39] *dy/dan » Blog Archive » Asilomar #1: Motivation*

    [...] congruent and comprehensive assessment, emphasizing a "menu" style assessment which sounded somewhat familiar. [...]

40. *on 01 Dec 2007 at 12:16 pm*[40] *dy/dan*

    [...] congruent and comprehensive assessment, emphasizing a "menu" style assessment which sounded somewhat familiar. [...]

41. *on 11 Mar 2008 at 1:41 pm*[41] *Evalueren | Wiskunde³*

    [...] Testen opstellen vind ik zowat het moeilijkste wat er is. Door de lerarenopleiding weet ik dat je moet proberen je doelstellingen en verder niets te testen. Ik probeer dit dan ook toe te passen. Als ik wil dat leerlingen primitieve functies kunnen bepalen van enkele basisvormen dan vraag ik dat. Maar wat als ik wil dat leerlingen "niveau" halen. Kan ik op een test een moelijker, open probleem vragen? Ik vind van niet en ben het daar dus eens met wiskundeblogger Dan Meyers. [...]

42. *on 20 Mar 2008 at 2:26 pm*[42] *Math Stories : Stupid Standards*

    [...] What I really want to see is a concept list. Like this (thanks dan): [...]

43. *on 09 May 2008 at 7:24 pm*[43] *jeffreygene*

dan…i reread this post this morning and for some reason my brain found a way to picture using this approach with grammar & vocabulary skills in my esl classes. i can't give letter grades as final marks… using a rubric system, IBMYP…but i can see this working.

if the idea manages to stay bouncing around in my brain, maybe that's a summer project to test out. would definitely share any results with you. faq #4 is hurting my head at the moment.

44. *on 10 May 2008 at 2:38 am*44 *Jake*

Dan,

My school uses PowerSchool for grading as well, and I just want to clarify one point:

If on the last day of school a student finally "gets" topic number 1, do you go all the way back to your very first gradebook entry and plop in a 5? In PowerSchool, will his final grade be affected by this change, even though the guidance office has already locked in the first quarter grade? Won't there then be a disparity between your calculation of the final grade and the guidance office's calculation of the final grade?

I know this picky stuff, but I'm definitely doing this thing next year and I want to have my bases covered. Any experience you could share would help.

(I think I'm also going to try this in my physics classes, so I'll give you some feedback in the future.)

45. *on 10 May 2008 at 7:14 am*45 *dan*

Jake, quarter grades at my school are nothing more than progress reports. We lock *only* at semester.

But playing this hypothetical game, last year, at semester's end I told kids with F's they could come in and remediate scores for first semester concepts. I'd just complete a grade-change form. However far you feel comfortable taking this thing.

Both **Jeffrey** and **Jake**: definitely drop back by with a note if this thing flies outside mathematics.

46. *on 11 May 2008 at 6:36 pm*46 *Frank N.*

Inspired by this post last summer, I implemented it with my physics classes this year. I also made sure one of my APs was in on it and I had her full support.

I took each large unit and broke it into smaller pieces. For example, the unit on Dynamics (Newton's Laws) became smaller topics: vectors, balanced forces, unbalanced forces, friction, and circular motion.

For each small topic, the kids were given a 10-point quiz. It could be one large problem, 5 muliple-choice questions, or a mixture of a small problem and some MC. Students received 3 of these topic quizzes every Friday. Each week, a new topic rotated in and an old one rotated out. Therefore, a student was quizzed on a topic 3 times in class. They could come after school to take additional quizzes if they wanted to, but only on Wednesday–science extra help day–and they had to tell me which topic they wished to retake, but no more than 3 at a time. I established those "silly" rules in January to keep me (and my family) sane. I counted only the highest 2 quizzes. Like Dan, kids can retake quizzes on 1st quarter topics in June. They keep track of their scores on a concept checklist (Dan's) and store everything in their own quiz folders.

I like the idea of "mastery learning." Physics requires a set of mental muscles kids aren't used to flexing

yet. A problem that gave them trouble in October is usually cake for them come June, because they now know “how to think.” And why should they be penalized for that?

Some things that have helped me institute this system: buy-in from the students, my old exams which have been sliced up into topic quizzes, and a test wizard program (eduware.com) for creating retake quizzes effortlessly. I’m in NY, and my kids take the Regents exam, so the test wizard is a must-have for my assessment system.

Now, has all this craziness made a difference? I can tell you this: the kids don’t feel defeated by physics as they did in years past. They can get a 2/10, realize that they didn’t know what they thought they knew, and come back to get a 9/10 and feel great. Plus, when it comes down to grades, there isn’t anything stopping them from getting a 100 each quarter. The ball in in THEIR court. How can a parent argue with a system like that?

In addition, I can immediately tell which topics need re-teaching by me and which the kids get right away.

We’ll see come June on the Regents exam if the actual year-end performance fairs better than last year.

I know my system isn’t perfect. If anyone has questions/comments/suggestions, I’d love to continue the conversation.

47. *on 11 May 2008 at 8:06 pm*47 *Glenn*

Frank,
Reading this gives me even more incentive to do this in my Alg 2 classes next year. If it can be done in physics (and I am certified for physics also) then it can be done in any math class or science class.
Thank you!

48. *on 14 May 2008 at 1:20 pm*48 *Scott Elias*

Frank –

As a former physics and math teacher, I love your ideas. Few classes I’ve seen beat kids down the way physics seems to. Had I used your strategy it would have been much more reachable.

In passing, I had to comment that I have a math teacher in my bldg who does something similar as far as mastery learning and I actually **did** have a parent call me to complain. After all, if her daughter is happy with a “C” in the class why should the teacher force her to continue to retake the quizzes until she gets an “A”? It’s her right to get a “C”.

sigh

I’m actually volunteering to teach a 12th grade math class in my bldg next year and will be structuring assessments according to this model. This will give me some additional “street cred” when I coach our new teachers along the path to understanding that just because that’s the way we’ve always assessed doesn’t mean it’s the best way.

49. *on 15 May 2008 at 5:38 pm*49 *dan*

Maybe I can share in the comments that here, at the end of the year, a line of kids stretching out the door before school, after school, lunchtime or any *other* time I’ll offer remediation and re-takes, I get really, really, weird.

Today there was ten minutes left in lunch. I hadn't yet, y'know, eaten lunch. I had 34 tests to correct (quickly) and enter (quickly) before passing them back the next class. I had some slides to queue up. So I closed up shop early. Can't take anymore, I said.

And I tell you the truth that if any kid so much as bats an eyelash at that directive, much less whines about it being "unfair" like two kids did today, I tend to go totally insane.

Y'know, it's like, hey, I've tutored you and offered you re-assessment on Similar Triangles *five times*, which, if I'm not mistaken, is *five times* more than any of your last nine math classes would've. And you're twisted up because I want to get some chicken in me before I have to teach you for two hours?

WHA?!?!?!

I can't help it. I call 'em out directly. I tell 'em to come back next week after they've readjusted themselves.

This is more trouble than it's worth sometimes. Get the math right the first time, kids.

50. *on 17 May 2008 at 3:16 pm*[50](#) *dan*

Replying to Kate's questions from another post:

> Do you have kids who say 4/5 is good enough and don't want to keep working to 5/5? What do you do about them?

I don't think anyone consciously stops trying at 4/5. That first 4 is an easier problem, though, and some students never stretch past it. This will reflect in their final grade.

To the heart of your question, retention will always be a greater issue in this system than under traditional assessment. But it's nowhere near unconquerable (with openers, review exercises, etc.) and the alternative (test every student on the same questions regardless of past performance) isn't worth the consequences (students don't feel ownership over their own assessment).

> Is the last week of the marking period a nightmare for you?

Please see the comment immediately preceding this one.

In a word, yes. But how awesome is it that when the kid comes in late semester with an F, I don't have to say, sorry, man, I don't think you can dig your way out of this one in time. Those kids, in a traditional setting, then check-out and become disciplinary migraines.

> For example you have "Proportions", I split that up into simple x-multiply, x-multiply with distribution, solving a word problem with a proportion, and sides of similar figures. Am I doing it wrong?

My proportions question is a two-parter, each worth 2 points for a total 4. The first part was an x-multiply, the second was a word problem. That's worth a 4, or a B. With the second question, I'd turn the first half into an x-distribute. That's worth the A-plus.

Basically, you've gotta integrate as many as you can under one heading without making it too large to direct remediation. This process *does* necessitate some cuts. I had to free myself of the mindset that, just because I taught it, I had to tentpole an assessment around it. But, I mean, they work through these concepts on classwork, homework, openers, and projects also.

51. *on 21 May 2008 at 3:42 am*[51] *Kate*

    Thank you for the response and your honesty (and sorry it took so long for me to say so, I didn't see the redirect in the other post comments until now). If I ever have enough to say that I get a blog going, I'll write about how this goes next year.

52. *on 05 Jun 2008 at 2:09 pm*[52] *» Anonymous online education*

    [...] 1) this summer, I tutor one or two students in high school math using nothing but pdfs, maybe scanned drawings, forum software with latex, … basically things that could be scaled to (3) below. I use in main part the assessment system described by Dan Meyer here and here. [...]

53. *on 27 Jun 2008 at 3:13 pm*[53] *Formulas FTW: Thoughts On Teaching*

    [...] A failing grade on this writing style still isn't as specific as a failing grade would be in Dan's gradebook. Did the student fail because of grammar issues, unfocused points, poor explanation, too little [...]

54. *on 29 Jul 2008 at 1:35 pm*[54] *D.C. Hess*

    This sounds like a great system and I am very intrigued by it's possibilities. However, what occurs to me is that this is fundamentally and singularly suited to skills assessment. As a result it works with Math and perhaps English. How can such a system translate for content assessment? In History assessment doesn't measure skills. At least not how the standards are currently written. We cover content and students are tested on what they have internalized.

    I have started using an assessment method that grades student responses to content based questions differentiated along Bloom's Taxonomy, but if how do you retest the same question over and over again? In math you test the type of problem and change the numbers, but in History it's not as simple.

    I'd love to hear from anyone in social studies who is using Dan's method. Meanwhile, I will mull this over some more and see what I can come up with.

    From one Dan to another, I also like teaching. Great blog, I'm hooked. I'll certainly be talking to our math department about this concept.

    If they adopt I'll let you know.

55. *on 20 Aug 2008 at 10:55 pm*[55] *What a long list! « My Math Class Weblog*

    [...] Algebra 2, Dy/Dan, Geometry, Skill Based Assessments So I'm taking Dy/Dan's lead and incorporate skill/concept based testing. I am excited about this because it gives me the opportunity to be more specific and [...]

56. *on 21 Aug 2008 at 8:58 pm*[56] *Sarah*

    Bringing you back to the discussion of these assessments. Are the sample tests here the easier or harder version of the questions you give?

57. *on 21 Aug 2008 at 9:32 pm*[57] *dan*

    Appears to be a little bit of both. Sorry. The hardest question should match the hardest variation you can find in any of your state's frameworks. The others should simplify things by degrees.

Least helpful comment I have ever written.

58. *on 22 Aug 2008 at 5:28 am*[58] *Sarah*

    Laughs, combined with my state's framework, yup, pretty unhelpful. (I'll use other state's released questions.) But it is reassuring to know that it's a mix–some questions seemed trickier than others.

59. *on 21 Sep 2008 at 8:33 pm*[59] *From Rubric To Percentage: Thoughts On Teaching*

    [...] requirement of the writing, the Final score is the percentage earned on the assignment. In a nod to Dan's method of assessment, I'll be entering each score into the gradebook separately so that we can see development on [...]

60. *on 29 Sep 2008 at 4:15 am*[60] *Math Stories : How Math Must Assess: A Review*

    [...] implementing Dan's grading program, with some minor variations. I'm finding it to be almost all [...]

61. *on 13 Nov 2008 at 6:35 pm*[61] *Erin*

    Great ideas! I can't wait to try your system in my 6th grade math class. However, I am still having trouble understanding how you assign points to the problems. Is it four points per concept, or four points per test? What is the fifth point for? If there are six problems how do you translate that into four or five points? Could you clarify your grading process? Thanks!

62. *on 13 Nov 2008 at 7:20 pm*[62] *Erin*

    I just watched your slide presentation and it all makes sense. Thanks and disregard my previous post!

63. *on 09 Dec 2008 at 3:58 pm*[63] *dy/dan » Blog Archive » Asilomar #8: Making Math Movies*

    [...] needs a more meaningful place in our grading schema than "token extra credit." This is easy if you break your grades out by standard. Otherwise, [...]

64. *on 23 Dec 2008 at 2:36 pm*[64] *dy/dan » Blog Archive » On Nailing/Blowing Assessment*

    [...] N., from the comments, co-opting this assessment strategy for physics. Now, has all this craziness made a difference? I [...]

65. *on 16 Jan 2009 at 6:49 am*[65] *Ashli*

    Thank you so much for this! I have been sharing it with everyone in my department (and really, everyone I know as I am THAT excited about using something so awesome) and I'm greenlighted to test it out in two of my classes next semester and I cannot wait (or perhaps I can as the whole setting up the standards thing is pretty daunting :)

    My question is if you have any advice for someone starting up the system? Beyond what you've written, is there anything in particular to look out for? Any particular way you explain to the kids how it works that help them comprehend it and appreciate it, or do they not really catch on until they've been doing it a while? I really want to do this right!

    Can't wait to start it up here in Washington and I'll drop a line to let you know how it goes! Thanks again!

66. *on 16 Jan 2009 at 6:11 pm*[66] *dan*

Ashlii, I hope the implementation of the thing meets your expectations for it it. My only words of caution and advice would be:

a) This system takes much more time than you anticipate now. The more opportunities you offer students to remediate their skillset, the more satisfying the process but the more time it consumes. My first year I let students retake as many concepts each day as I had time for. It felt like I never really left school some days. Now I let them make up one concept per day. And if they miss it, I send them home with a couple of problems of related homework they have to practice before they can retake it again.

b) As much as you can set-up your gradebook and templates and problem banks in advance the better in the long run, though that probably goes without saying.

67. *on 30 Jan 2009 at 9:38 am*67 *dy/dan » Blog Archive » I Do Not Get Assessment At All Sometimes*

[...] do we mean when we say "grades"? I don't know what kind of results here would prompt me to pack up the shop and dole out monthly, summative unit exams ("Chapter 6 Test") with the rest of my department. The [...]

68. *on 17 Feb 2009 at 1:35 am*68 *Touzel*

Dan,
A colleague of mine turned me on to your blog six weeks ago and I love it. Great stuff. You are really helping to stretch my thinking about some things I've needed help with for a while.

I have a question, though. I love your assessment practices and look forward to applying this in my class. I notice that your questions are very procedural, California-STAR-test type questions. Do you give any assessments that require critical-thinking or problem-solving?

Thanks!

69. *on 17 Feb 2009 at 5:59 am*69 *Kate*

Hi Touzel – I can tell you what I do. After each assessment I hand out a small number (2-4) of more extended, problem solve-y problems and give the kids a week to complete and hand them in. These only count for 10% of their grade whereas the assessments count for 70%.

70. *on 17 Feb 2009 at 7:33 am*70 *Dan Meyer*

Yeah, what **Kate** said. Most important to me is that I prepare kids for continued math study so my assessments test procedure. I work critical thinking and problem solving into classwork and homework. They don't weigh as heavily on the grade, but the only reason I want a kid to fail my class is if she lacks the requisite skills to move on to the next class.

71. *on 17 Feb 2009 at 9:11 pm*71 *Touzel*

Dan, I have a dilemma for you: if you had to choose between preparing kids for continued math study (in classrooms) and teaching them math that they'll use in their lives outside of classrooms, which would you choose?

Kate, that sounds awesome. I'd love to see some examples of what this looks like. I am afraid of getting lost in procedures (which is very easy for me) and I struggle in developing problem solve-y problems on my own in a time-efficient manner.

72. *on 18 Feb 2009 at 7:48 am*[72] *Kate*

    I am getting better at writing them but I don't think it comes easy to anyone at first. I would recommend getting some quality sources of good questions. I have some books called "cruising through the math a" and "cruising through the math b" which are supposedly regents exam review books but have some really nice questions in them, organized by topic. (Other state assessment review books are good too but those are my favorite.) If you have any older textbooks lying around they can be good – look at the "challenge problems" and easy them up a little if you have to. I also plunder the questions in the calendar in the NCTM publication "Mathematics Teacher" (it's the centerfold of the magazine every month – which cracks me up). SAT and PSAT review books aren't bad, either. I'd be happy to throw some of mine online for you but it will have to be when I get back to school next week.

73. *on 18 Feb 2009 at 7:53 am*[73] *Touzel Daddy*

    Dan, I just learned of your site from my son. It is wonderfully challenging, fun, and real. As a teacher I have struggled with grading. The key question to considered in authentic grading is how to reward students. Do we reward them for effort? For demonstrating mastery of the correct procedures or prescribed content? Or, for creative problem solving of difficult/real problems? If the third option isn't significantly rewarded, aren't we sending a strong message to them that we, as professionals in our field, do not value critical thinking? I don't suppose we have to give 30% of the grade to critical thinking, but 10% doesn't seem to be enough to me.

74. *on 02 Mar 2009 at 3:26 pm*[74] *Humanities and the DY/DAN Method | EricHoefler.com*

    [...] Meyer has a famously-interesting perspective on grading and homework. In a recent post, he offers a scenario of a student (Aaron) who has only attended 20% [...]

75. *on 29 May 2009 at 6:38 pm*[75] *Homework, Assessment and Differentiation! Oh My! « Questions?*

    [...] struggling with 15.0, we need to be a bit more specific in order to fix the problem. I know that Dan has done a nice job of explaining the need to break the curriculum down into skills and he has a [...]

76. *on 19 Jun 2009 at 7:01 am*[76] *Elissa*

    Ok I'm still a little confused on steps 10 and 11. Say Student A gets a 3/4 the first time on a certain concept. The next time she again gets a 3 out of 4. What is her grade now? A 3 out of 5? Does it stay that way until she gets two 4′s in a row?

    If they get 4 out of 4 both times then that becomes a 5 out of 5, correct? Stamp and move on. So hey have to get two 4′s in a row before it turns into a 5?

    Also, how do you grade homework? Is it also on a 4 point scale?

77. *on 22 Jun 2009 at 2:55 pm*[77] *Dan Meyer*

    I grade homework for its attempt only. So long as a student gives me something we can talk about, it receives credit.

    And your summary of steps 10 and 11 is correct.

78. *on 22 Aug 2009 at 7:40 am*[78] *Z*

    Hi, Dan.

You and Spence Rogers have inspired me to transform my assessment process.

I read your assessment posts, the comments, and your responses to the comments.

I decided to try and tackle the "higher order level questions present?" issue.

Please take a look at the resultant ASSESSMENT FORMS and brief videos at http://teachinganyway.edublogs.org if you have the time.

I would LOVE to know what you think, as I have not yet tried standards-based assessment and you have. I'm sure you have perspective that I don't.

Thanks so much! I'm enjoying the blog.

Sincerely,

Z

79. *on 23 Aug 2009 at 4:05 pm*79 *Dan Meyer*

Zendre', thanks for the heads-up on your site. Your settings require an edublogs account for comment-posting, so I'm posting mine here. I appreciate that you're taking on the issue of higher-order thinking assessment. I haven't done enough here. But I watched the video where you demonstrate a concept quiz and even though you're asking some very difficult questions, you're structuring them down the page and prompting students to the point that I'm not sure they're really engaging in the higher-order thinking we're after. You're nudging them through the assessment. I'm trying to think of a modification that would leave the student with more of the process to complete on her own.

This is clearly a complicated issue. In case you find it thought provoking, here is Alison Blank attempting a solution to the same problem.

80. *on 24 Aug 2009 at 5:18 am*80 *Z*

Hi, Dan.

Thanks for the feedback!

About the video: It was a snapshot of just ONE of the questions on a quiz with answers filled in. Perhaps that's why it seemed to be too "nudging?" I filled out columns 1 and 2 for that particular question to let teachers see what STUDENT answers for these columns might look like. I would expect the VAST majority of the students to fill these columns out 100% themselves. Only students needing modification might need the teacher to fill in select blanks or the first column, for example.

You may not have time to actually look at the PDF of a BLANK quiz (Format A and Format B). I've been fiddling around with writing higher-order questions into the forms.

The point of that question shown on the video (1 of four) is to find SOME kind of way to make a question that asks students to iterate through an algorithmic procedure a task asking for higher-order skills. Right now I'm thinking that asking the students not just to calculate but to justify a calculation might be going in the right direction. The research I'm looking at right now says that American teachers especially take procedural competence as "understanding" when it's possible to iterate through procedures with no understanding.

But . . . thank you so much for the feedback and the link to Alison's post! I'll show the forms to a couple of math ed professors I know and see how they can be improved to call for higher-order thinking.

Thanks!

81. *on 24 Aug 2009 at 6:43 am*[81] *Sue*

I just mentioned Cornell's Good Questions Project somewhere else, and I wonder if it would be helpful here, if we're thinking about getting a deeper understanding.

82. *on 06 Sep 2009 at 4:49 pm*[82] *Elissa*

How much and what kind of work do you do during class? I've been assigning between 2-4 problems of homework but I know they aren't getting enough practice. I'm pretty sure you teach in a block schedule and I teach on a daily 52 minute schedule which I think makes a difference as well. My algebra concept list has 59 concepts on it and I don't know if that's too many or not. And I don't see how you assess every concept twice but you assess weekly with only 3 or 6 problems. It seems like I will teach for 4 days, and assess those 4 days concepts on the 5th day. Then the next week I repeat, so do I now assess last weeks 4 concepts plus this weeks? I don't know why I can't understand this beast but I'm only halfway implementing this and I don't know how to do the rest. And most importantly, how do I explain all this to the student so they understand how to improve and that their grades actually have meaning?

83. *on 06 Sep 2009 at 4:53 pm*[83] *Dan Meyer*

Fifty. Nine. Concepts.

That's immense.

Do you have that concept checklist posted somewhere?

84. *on 06 Sep 2009 at 6:12 pm*[84] *Elissa*

Yes, here: http://www.scribd.com/full/16986072?access_key=key-2ixkf96pv78rebieo0ao

It's not really a concept list, it's basically every section in the book I plan to cover.

Keep in mind that I am a first year teacher who only knows about traditional assessment and I basically have no idea what I'm doing.

I don't know how to condense and get over the idea of assessing everything.

85. *on 06 Sep 2009 at 8:11 pm*[85] *Dan Meyer*

> I don't know how to condense and get over the idea of assessing everything.

Go back to unit tests if you can't. This will drive you nuts and that kind of nuts just isn't worth the stress in your first year.

My encouragement would be to:

a) combine concepts as much as you can without invalidating the assessment. A good order of operations problem is good enough to assess adding, subtracting, multiplying, dividing real numbers and the number line. That's five for one. But don't throw a variable into that problem to make it six for one, right?

b) understand that a student's grade is always an inference, a score determined by a model that's flawed and subjective in its own way. I don't assess "Graphing Circles In Standard Form," but I assume that a student's grade on "Graphing Ellipses In Standard Form" is a pretty good indicator for circles.

I think you've got to get comfortable with (a) and (b) or this thing is going to be more trouble than it's worth.

86. *on 06 Sep 2009 at 8:37 pm*86 *Elissa*

    I don't know if I can leave it alone because I see so much value in it. It's hard to knowingly go down the wrong path when you can see the right path and all the cool kids are on it.

    I'm queen of categorizing so I suppose I've broken it down too far.

    I need a concrete example. Could you give a summary of what a regular week looks like in your class? Day 1: Teach ____ and so on and then what that week's assessment will look like?

    Right now, taking notes and homework seem to have no meaning so I'm banking on assessments to take the cake.

87. *on 24 Sep 2009 at 10:48 am*87 *Revisiting grading — Navigating the New Teacher Experience*

    [...] screencast and a checklist she uses to track and motivate students. Also consider exploring this blog post from a secondary math teacher explaining his assessment [...]

88. *on 13 Nov 2009 at 6:19 pm*88 *Assessment, One Skill At a Time - Point of Inflection*

    [...] specific skills. For the most part I am following Dan Meyer's example, described briefly at http://blog.mrmeyer.com/?p=346, and working with a vague idea of what Hans, a logic teacher here, does. Instead of getting back [...]

89. *on 26 Feb 2010 at 5:00 pm*89 *Thing 4: So many blogs, so little time . . . | Out of the Frying Pan and into the Fire*

    [...] of my intended purpose. For example, reading Dan's post on homework, I am lured into reading his supplementary documents and then the comments on them so that I take a huge amount of time getting the original article [...]

90. *on 26 Apr 2010 at 7:53 pm*90 *SciPub » Blog Archive » Standards Based Grading*

    [...] dy/dan – A great argument for SBG in a math class with lots of practical information and examples. [...]

91. *on 01 Jun 2010 at 4:51 am*91 *First Post (#WCIDWT) « Mr. Anderson's Blog*

    [...] SBG this year in Algebra, but really the people that have wrote nice stuff on the subject are: Dan Meyer, Shawn Cornally, and Kate [...]

92. *on 13 Jun 2010 at 8:14 pm*92 *Homework and Its Purpose « The Grapes of Math*

    [...] is a movement of sorts right now in mathematics education that some really excellent teachers have been implementing. Standards-based grading is a system of assessment that measures [...]

93. *on 17 Jun 2010 at 2:58 pm*93 *frustration leads to anger, anger leads to… change « Math is a shovel*

[...] was taught (one to teach, one for them to check and fix homework, then quiz) in the same fashion as dan. This way I'll be forced to keep up on assessment, and the students will have a good [...]

94. *on 29 Jun 2010 at 6:57 am*[94] *My SBG Journey « Action-Reaction*

    [...] I read Dan Meyer's manifesto "How Math Must Assess." I simply broke up my major units into smaller skills. For example, my unit on [...]

95. *on 03 Jul 2010 at 9:09 am*[95] *more on SBG « Gas station without pumps*

    [...] grading, teaching One of the first presentations on Standards-Based Grading that I read was Dan Meyer's post, which seems to have started many others as well. I've also been reading Sean [...]

96. *on 07 Sep 2010 at 5:56 pm*[96] *My SBG Geometry Plans | Maryland Math Madness*

    [...] borrowed a lot of Dan's style in the following documents which I hereby share: a blank skills list handout for students to track [...]

97. *on 02 Oct 2010 at 12:44 pm*[97] *Vision Statement (Part 2 of 7?) – Standards-Based Grading « Vertex, or is it?*

    [...] switched to standards-based grading. The system that I implemented (and still use) was adapted from Dan Meyer. It transformed my classroom. Grades reflected learning. Students could reassess skills and have [...]

98. *on 12 Oct 2010 at 7:53 am*[98] *» What's in a Grade? Exploring Professional Growth*

    [...] The Comprehensive Math Assessment Resource blogpost by Dan Meyer [...]

99. *on 24 Dec 2010 at 11:36 am*[99] *My SBG « Work in Pencil*

    [...] dy/dan [...]

100. *on 03 Feb 2011 at 9:29 pm*[100] *Phil Sumida*

    I did this for my senior-level physics class. These are average-level students in a large suburban high school outside Chicago (that is closed today). I used the same grading scheme you used: 0-4 scale for a basic and complex problem, and completing mastery means that you've answered two questions consecutively at a "4″ level. I break the goals down into 2-3 day sections of content and post the goals as we learn them. (Mostly, I BS'd the goals at the beginning: 18 years of experience makes that easy. However, the process has become clearer, to the point that I am giving students a list of goals per quarter.) They can retake a goal until they achieve it. I have, however, limited the window for retakes to one month after the goal is initially assessed (mostly for my own sanity). Also, the weekly tests (we call them "rolling tests" because the concepts "roll" from week to week) have between 3-6 goals on them.

    I still grade all of their other assignments the same way. Although the point total is a smaller percent of the total point total than yours (28% rather than 70%), because they're on the "0-4″ scale, the grades on these standards-based assessments "weigh down" the grades of those who do not succeed on a goal.

    I did my initial test in a scientific-ish way. I started at the beginning of the second quarter, selling the process to my lowest-performing class. They used it for the entire quarter, using the same materials as the other class that was doing the regular grading scheme. At the end of the quarter, I gave each group the multiple-choice district assessment for the course, which is a pretty good set of questions (full disclosure:

I helped revise it 3-4 years ago).

Ah, but there was a wrinkle. Not all of my students were going to take the district assessment, because it was part of the semester exam. As a "reward" for making AYP on their standardized achievement test, students with an "A" or "B" were allowed to exempt themselves from one or two finals, depending on their math/reading scores. Most other courses dumped their final exam as a way of "protecting" their semester assessment. I did not dump mine or restructure it. Hence, the only students who took the exam were (a) juniors in the class because they failed out of the accelerated chemistry course, (b) students who wanted to raise their grade from an 89% to a 90%, (c) students with a C or below, or (d) students who did not do well on the standardized test. Most were in group (c).

So I attempted to make do with it the best I could. I scored the standardized test, and what did I find?

- Students in the standards-based grading course had an 8% gain over those who didn't. It was actually a 5% increase on the test, which was about 2 questions better, but it was a significant improvement.
- The students in the treatment group (standards-based) had lower overall grades in both quarters 1 and 2 than those in the control (regular assessment) group.
- Students in the treatment group improved their grades by 5% overall after the standards-based approach was adopted (I suspect that this result is a bit of a "Hawthorne effect").
- Students in the treatment group had lower ACT science scores than those of the control group, though they did have a higher composite ACT score than the control group.
- Students were generally happier with the assessments in the control group. Some grumbled because they couldn't just "move on." I'd like to add parenthetically that those grumblers were not my high-achieving students: they were mostly had solid C's.

After a discussion with my principal about all of this, she asked if I planned to use it with all of my students. I said that I did, but that I didn't know if I would do it for the second semester. She wisely suggested that I ask the students what they wanted to do. I presented the data and brought students from the treatment group to explain the system. One of my classes was on board right away, and the other kept asking me what I wanted them to do. I told them that I did not care, because the amount of work was the same for me. I let them vote, but made clear that I would not change a class policy unless 2/3 of the students were on board. The votes were 87% and 78%, respectively, to change to the standards-based system.

I cannot thank you enough for all you've done for my teaching. This has been among the most valuable changes I've ever made in my 18-year career. Next year: start the lessons with "messy" problems as you suggested.

101. *on 13 Feb 2011 at 2:25 pm*[101] *First new goal: no one fails. | Solving Problems*

[...] Allow me to introduce you to the single most brilliant thing I found in my explorations all week: Dan Meyer's explanation of how to assess math properly. (Here.) [...]

102. *on 26 Apr 2011 at 5:08 pm*[102] *Assessments: My Plan « Math Reminders*

[...] "The Comprehensive Math Assessment Resource" [...]

103. *on 03 Jul 2011 at 11:53 pm*[103] *Reflections on My First Year of SBG | e-frank.com*

[...] my first year trying SBG (Standards Based Grading) after being inspired by a handful of teachers. (ddmeyer, jybuell, ThinkThankThunk, fnoschese) I taught five sections of physics this year and have used [...]

104. *on 04 Jul 2011 at 10:49 am*[104] *Anne*

I noticed that 20% of your grade consists of classwork/homework. How, exactly, do you assign point to these activities?

105. *on 04 Jul 2011 at 7:28 pm*[105] *Dan Meyer*

I award classwork and homework points for effort and completion, not accuracy. Ten points is full. Five is half. Zero is incomplete. Students can make up those assignments.

106. *on 06 Jul 2011 at 4:06 am*[106] *Anne Webb*

does it take AT LEAST 2 separate quizzes for a kid to master a LT? also, just to make certain I'm getting this, could a particular students test look like: 3, 8,9,10?

107. *on 06 Jul 2011 at 10:34 pm*[107] *Dan Meyer*

I'm not sure what an LT is but I'll assume it's something like one of my concepts. The tests I hand out in class, with rare exception, are all sequential, with three concepts: 6, 7, 8 and then 7, 8, 9 the next week.

A student can come in and grab #3, though, on her own time.

108. *on 07 Jul 2011 at 2:30 am*[108] *Anne Webb*

Learning Target (LT)

I clearly wasn't thinking when I posted that comment….I was forgetting about reassessment! In BC Calculus, I'm having trouble limiting the number of concepts. Any suggestions?

109. *on 07 Jul 2011 at 8:43 pm*[109] *Anne*

Ok, Dan….I'll try to make this my last question….You know how each concept is assessed at least twice? Say I'm on the first assessment….Concepts 1,2,3

Do I include a basic and harder questions for each concept on one quiz? Then next week, assess 1,2,3,4 with the same format?

I guess this is what's bugging me: Say a kid gets a 4 on the basic and advanced question for concept 1 on the very first assessment. Do they have to answer concept 1 question on the 2nd week's quiz? Does this make any sense at all?

thanks,
Anne

110. *on 08 Jul 2011 at 10:17 am*[110] *Dan Meyer*

Speaking generally, students have fewer options with whole-class tests than when they came in on their own time.

So you might see this test one week:

#6 – hard
#7 – hard
#8 – easy

Then next week:

#7 – hard
#8 – hard
#9 – easy

It's a bummer that a student who has never passed #7 is stuck seeing the hard version in class. It just wasn't possible to individualize the whole-class tests to that degree. That student can come in on her own time, though, and get the easy version of #7.

Let me know if that needs some more clarification.

111. *on 08 Jul 2011 at 11:15 am*[111] *Anne*

So do you assess each concept 3 times…..easy hard hard? On a particular quiz, might you ask an easy AND hard question on the same concept?

Like if I'm testing Order of Operations…..I can see having several parts to one question. Do I make them all easy first time around?

Thanks, Dan. I'm really looking forward to implementing this in August!

112. *on 08 Jul 2011 at 6:04 pm*[112] *Dan Meyer*

> **Anne**: On a particular quiz, might you ask an easy AND hard question on the same concept?

I don't, no.

> **Anne**: Like if I'm testing Order of Operations…..I can see having several parts to one question. Do I make them all easy first time around?

FWIW, I asked the students to calculate one numerical expression for order of operations. The easy problem probably didn't include exponents, or it didn't result in any negatives. The harder problem threw the book at them.

113. *on 10 Jul 2011 at 8:19 am*[113] *Jumping in. « Mr. Rajewich*

[...] must give credit to Dan Meyer, and of course others, as I stumbled across his post while searching about assessment and things got a whole lot brighter in my brain. This discovery [...]

114. *on 10 Jul 2011 at 5:35 pm*[114] *Anne*

Okay, Dan….I lied. If there is a better way to ask you questions, please advise.

I opened one of your sample tests for Algebra 1. Consider this question:

2) Integer Operations
a) -13 + 5
b) -2 – (-7)
c) -5(-3)
d) -24÷6

How would you determine a score? If the kid got one right….a 1, two right…..a 2 and so on?

115. *on 10 Jul 2011 at 7:36 pm*115 *Dan Meyer*

> **Anne**: Okay, Dan….I lied. If there is a better way to ask you questions, please advise.

I think this is great, just in case someone decides to read all the comments and has the same questions you do. This particular question is easy. There are four parts to the problem. I offer one point per part.

116. *on 11 Jul 2011 at 6:14 pm*116 *Anne*

You have been so helpful, Dan. I'm sure this information is somewhere in this post, or elsewhere in your blog….but can you share a couple of things with me?

1. Do you have a general scoring rubric?

2. My school uses Infinite Campus, and grades are percentages: 90-100 A
80-89 B and so on. Do you have to convert your 0-4 point scores to percentages, and if so, how do you do that?

Thanks a ton!

Anne

117. *on 11 Jul 2011 at 6:16 pm*117 *Anne*

An added side note–yesterday I purchased a subscription to ActiveGrade, so I do plan on using it, and then transferring those grades to IC.

118. *on 12 Jul 2011 at 8:55 am*118 *Dan Meyer*

> 1. Do you have a general scoring rubric?

That's something I should definitely put in writing in the main post. Generally, a four is perfect, a three is perfect conceptual understanding with minor mechanical errors, a two is major conceptual misunderstanding or major mechanical errors, a one is for any attempt at the problem, and a zero is for no attempt.

> 2. Do you have to convert your 0-4 point scores to percentages, and if so, how do you do that?

My testing gradebook looks like this: 3/5 2/5 5/5 3/4

The program I used automatically summed the total possible points and divided that into the total points earned to create a percentage.

119. *on 14 Jul 2011 at 8:38 pm*119 *Anne*

[My testing gradebook looks like this: 3/5 2/5 5/5 3/4]

Dan,
Am I missing something? If a 4 is perfect, then why do you have 3/5, 2/5, 5/5, etc.?

120. *on 14 Jul 2011 at 8:40 pm*120 *Anne*

I feel like I'm stressing over the "little things", but I feel like I should be doing that now, rather than

when school starts. I want to have these details in place before, then when August 10 rolls around, I can focus on teaching the standards!

121. *on 15 Jul 2011 at 4:06 am*121 *Dan Meyer*

Right, so a 4 is perfect on the first assessment, the easier question. Then the question becomes harder and I change the total possible number of points to 5. If the student scores two 4′s — one on the easy and one on the hard — their score turns into a 5/5.

4 + 4 = 5. It's really pretty obvious.

122. *on 18 Jul 2011 at 6:35 am*122 *Anne*

What if they get a 4 on the easy and a 5 on the harder….or is that possible?

Now I'm really nervous…..what do you do if they get a 3 on the easy and a 4 on the harder. Do they only reach mastery if they get 2 fours? And do the 4s have to be consecutive…….No…they just have to be a 4 on an easy question and a 4 on a harder one. You must label easy questions with, maybe an A, and the harder questions with, maybe a B. I wish I could sit down and talk to someone about all the little details that I'm so afraid I'm going to have questions about. I'm worried about the wrong things, aren't I?

123. *on 18 Jul 2011 at 6:52 am*123 *Dan Meyer*

No one ever gets a 5. The most anyone *on their paper* is a four. But if they get two four's it goes into the gradebook as a five.

They only reach mastery if they get two 4′s, which goes in the gradebook as a five.

These are good details to get down. I worry we're overcomplicating things, though.

124. *on 18 Jul 2011 at 1:13 pm*124 *Christopher Danielson*

This is interesting stuff. I hope Anne will do what we all do as teachers and take the answers to her questions as possibilities and then adapt to her own needs.

I have an equally complex system that I share reluctantly when I work with teachers and they insist on the details. In these conversations we inevitably bump up against a question I haven't seen Anne ask yet, but she has gotten close. So I'll ask it…

Dan writes:

> The program I used automatically summed the total possible points and divided that into the total points earned to create a percentage.

The question: Is it the case that a kid who gets two 3′s (conceptual understanding with minor computational errors) gets 3 points out of 5, and thus 60% (a D)?

Asked another way, Dan, what *letter grade* do you intend to assign to a student who averages 3′s? I assume it's not a D. If I'm right about that, then how do you turn 3/5 into something other than a D?

125. *on 20 Jul 2011 at 10:27 am*125 *MBP*

I also counted my final for 10% this past year. It turned out that an annoying feature of this was that kids

and their parents were upset when they did way better on their final after being less good on the topic tests. The way that I got around this is that when there were really significant improvements — like, 20 points or something — I counted the final for more.

Yes, can't please everybody, and you have to do what's right for the kiddies and provide them incentives to do what's best for them (i.e. study assiduously durin the year, and not to cram for a one-shot final). Still, this was something that I had to deal with both semesters.

126. *on 20 Jul 2011 at 1:46 pm*126 *At the Center of my Classroom « Study of change*

[...] the curriculum and require mastery. Similar to what is brilliantly laid out by dy/Dan (in 2007) here . I have the complete support of my county, principal and administrator, and hopefully, [...]

127. *on 20 Jul 2011 at 2:38 pm*127 *Anne*

Dan,
Look at this A-Easy
B-Harder C-Hardest

#1 A
#2 A
#3 A

#1 B
#2 B
#3 B
#4 A

#1 C
#2 C
#3 C
#4 B
#5 A

#4 C
#5 B
#6 A

#5 C
#6 B
#7 A

and so on……

Is this the way you would do it?
If it is, do you think there are "question banks" that I can find? I realize that I will have to create a bunch of questions, so if there are any good ones to "steal", let me know. Thanks!

128. *on 21 Jul 2011 at 6:07 pm*128 *Anne*

You're tired of me….aren't you:) It never takes you this long to give me your opinion!!

129. *on 21 Jul 2011 at 8:20 pm*129 *Daniel Schaben*

Anne – This one post by Dan fundamentally changed how I assess students and I have made some changes to Dan's original ideas as I implemented this assessment strategy to fit my classroom and my students as you will have to do as you run this live with students. I did not place much thought into where I placed the difficult questions. I was more concerned with the question, "does it asses student understanding of the concept?" That is the main part I focused on and it seemed to work pretty well.
As far as Dan being tired of you . . . I doubt it. I don't know him, but judging by this site he is very very busy. I am not sure how he stays current with it like he does. I am pretty sure that he doesn't sleep.

130. *on 21 Jul 2011 at 10:24 pm*130 *Dan Meyer*

Whoops. It just slipped past me, Anne. Nothing else meant by it. These are good questions.

I don't do a "hardest." Just easy and hard. Change the Cs to Bs and you've got my system nailed. As for a question bank, I don't have anything that'd be particularly useful. I'd look at the released questions for your statewide exam. Those are the benchmarks your students need to meet. Good luck.

131. *on 22 Jul 2011 at 4:31 am*131 *Joy*

Hey Dan!

I have been looking for ways to make my 5th grade science assessments more authentic and this looks like exactly what I have been looking for!

How do you handle changes in grading period. We switch grading periods every 9 weeks and I am wondering how I will decide which numbers to include on each grading period. I want to give students as much time as needed to bring up their grade but feel like I need to include some of the topics on each grading period. What are your thoughts?

132. *on 22 Jul 2011 at 4:42 am*132 *Dan Meyer*

Hi Joy, that's a great, tricky question. Some of my students take three or four weeks to find a certain rhythm and acclimate themselves to a assessment format that isn't composed of several large high-stakes tests. If at all possible, I would offer students an Incomplete, rather than a D or an F, at the end of nine weeks. I mean, ideally, students could prove whatever skills they wanted whenever they wanted, even after the school year was over. At a certain point, we're constrained by logistics, though.

133. *on 22 Jul 2011 at 4:43 am*133 *Joy*

Sorry — I am finally getting through the comments and found your answer above. Disregard previous comment :-).

Thanks for all of your great ideas!!

134. *on 22 Jul 2011 at 7:02 am*134 *Anne*

Thank you, Dan!
I guess I'm thinking that I have to be totally prepared for everything before Day 1.
When you first began this process, did you just create authentic assessments as you needed? Were you overwhelmed with school work initially? Did you try SBG in one class, and then add others as you felt comfortable? If you can believe it, I've been teaching over 15 years…..

On June 1st, at a PD day, our curriculum specialist showed our department a video on Formative and Summative Assessments. It didn't go into great detail, but it seemed cool enough for me to

investigate….which is what I've been doing since June 1st! I can't wait to let you know how it is going after 9 weeks of this!

135. *on 22 Jul 2011 at 8:30 am*135 *Anne*

Daniel–
Thanks for the input. I know I am getting worried about too many little things, but, for instance, I can get into Infinite Campus and define things right now….I'm trying to get all the clerical things done so that when school starts, I can relax and do what I love-TEACH.

Along with asking Dan all of these questions, I have spent much time readying my Moodle (site for my students. It is far from complete, but check it out!
(http://one.owensboro.kyschools.us/lms/course/view.php?id=447)

Do you think I need to start a blog of my own to have all of these conversations? :)

136. *on 22 Jul 2011 at 10:14 am*136 *Daniel Schaben*

Nice Moodle page Anne!!! I bookmarked it. Here is one of mine although after August 2 we move them to another server so the address will change. But it gives you an idea of how I broke up my concepts. http://moodle.esu11.org/course/view.php?id=7. And you are right on. This assessment strategy frees you up to teach and I have way more students coming in to get help as they need it and instead of reviewing a dragon of a review that seems impossible to slay. I look at their sheet that marks how they have done on each concept and concentrate on what they are struggling with. It has been very liberating. All of my courses will use this method and I teach Geometry, Algebra II, Trig/pre-calc, and two other math courses that are tailored to our progression.

137. *on 23 Jul 2011 at 1:18 pm*137 *Dan Meyer*

> **Anne**: When you first began this process, did you just create authentic assessments as you needed? Were you overwhelmed with school work initially? Did you try SBG in one class, and then add others as you felt comfortable?

When I began, I found it easier to just jump in with every class at once. Maintaining two different assessment schemes seemed too complicated to me. It was my first year also, though, so I had less of myself invested in any other system.

And my strategy since the beginning has been to create assessments as I need them. I use the same template and edit the problems that are there. No concept checklist has looked exactly the same year to year.

138. *on 23 Jul 2011 at 2:04 pm*138 *Anne*

I think I downloaded your template–the one with 3 or 6 questions, right? Since we last "talked", I have visited several helpful sites for assessment ideas. Our district has adopted the National Core Standards, AND we attempt to incorporate the standards put out by ACT. When searching both of those topics (ACT Standards and National Core Standards), there was a plethora of information. Thanks for helping me become a better teacher!

139. *on 01 Aug 2011 at 7:08 pm*139 *Anne*

Dan,
I'm trying to develop a syllabus and another question arose (imagine that!)

When you give the term summative assessment, I'm assuming it is to check for retention. Is every target covered in a particular term included in this assessment, and how do you score it?

Secondly, I was discussing my new practices with my curriculum specialist, and she was concerned that one question per standard may not be enough to see if a student understands a topic. I explained that the question may have several parts, but wanted to clarify with you: weekly quizzes have between 3-6 questions, covering up to 6 standards?

In advance, thank you.
Anne

140. *on 02 Aug 2011 at 11:44 am*[140] *Dan Meyer*

Hi!

> **Anne**: Is every target covered in a particular term included in this assessment, and how do you score it?

My summative is next to worthless. The final exam is 10%. If a student has passed every concept (ie. two perfect scores on every concept), she can skip it.

For those that take it, I include every concept, grade them out of four points, add it up and take a percent. (I only do that on the final exam.) I think I also did a department-wide multiple choice section.

(One year I got curious how much students recalled on the final exam. Give it a look if you're interested.)

> **Anne**: I was discussing my new practices with my curriculum specialist, and she was concerned that one question per standard may not be enough to see if a student understands a topic

Keep in mind the student has to pass a concept twice — at least one of which is very challenging.

141. *on 15 Aug 2011 at 8:49 am*[141] *Tina*

A colleague and I are going to give this a shot this year and we are super excited about it. We have taken your comments and samples and tweaked them to suit our needs, but now we have some lingering questions.

Do you keep track of your students' score history? I'm wondering what the physical gradebook would look like if you do track every score without erasing and only keeping the new.

On the concept checklist the student keeps, how do they record their scores for each concept? I am assuming that if they get a 2 on a concept they make some sort of mark in the (2) column. Do they mark the date they earned the 2? Or just a checkmark? Or perhaps they record the number 2 in the two column? I'm not envisioning a way to record this and see their progression. Just wondering how you do it.

Where are the concept checklists kept, and do you allow them to take their quizzes home after handing them back? Do you have an assessment folder they keep everything in or do you leave it to the students to figure out where to keep their stuff (always a dangerous proposition)?

I am a 13 year veteran in the classroom and I have never been more inspired than I am with your ideas on SBG. Thank you so much for putting this out there.

Tina

142. *on 24 Aug 2011 at 11:49 am*142 *SBG: Skills Mastery as the Beginning, Not the End | I Choose Math*

[...] When I first got into this mathedtweetblogiverse two years ago, I was excited by the work Dan Meyer and others had done to make their expectations about skills clear to their students. Until that [...]

143. *on 24 Aug 2011 at 7:22 pm*143 *Sierra*

Dan,

I also have many of the same questions as Tina on how to implement the system on a daily basis. I am very inspired by the idea and am considering changing my assessment techniques as a result.

If a student gets a 2 on the first question and a 4 on the hard question, I believe their grade becomes a 4. How does this student make the grade a 5? Do you allow them to re-do the first question, or do they have the maintain a 4 on the next hard question or a retake hard question to acheive a 5?

Also, do you define your categories by key skills or essential understandings? What do you do if you feel you cannot assess a concept in one question? Do you split the concept into smaller more focused categories or give more questions per topic?

Do you ever weigh some concepts more than others in the grading system?

Thanks for the help… I may be the new Anne :)

144. *on 24 Aug 2011 at 7:26 pm*144 *Sierra*

Oh, also, do you ever give partial points such as a 3.5?

My district does not allow you to give "points" for effort or completion but rather wants grades to be a result of content knowledge. Therefore, I don't grade homework for completion, but like you I also don't grade it for accuracy.

Is it dangerous or wrong to make the student's grade determined by assessment alone?

145. *on 25 Aug 2011 at 1:35 pm*145 *Sierra*

I printed your thesis today and gave it to 3 administrators and one fellow math teachers. I am excited about the possibilities this has to offer.

146. *on 25 Aug 2011 at 7:04 pm*146 *Dan Meyer*

Hi Tina, thanks for the questions.

> Do you keep track of your students' score history? I'm wondering what the physical gradebook would look like if you do track every score without erasing and only keeping the new.

My students keep track of their score history on their concept checklists but I don't keep track of every score. Only their highest. Some teachers only track the student's most current score.

> On the concept checklist the student keeps, how do they record their scores for each concept?

My most recent thoughts on the concept checklist are here: http://blog.mrmeyer.com/?p=5597.

> Where are the concept checklists kept, and do you allow them to take their quizzes home after handing them back? Do you have an assessment folder they keep everything in or do you leave it to the students to figure out where to keep their stuff (always a dangerous proposition)?

My students hold onto everything. Sometimes they lose the concept checklist or their assessments, in which case they have to recreate the checklist before I'll allow them to retake a test.

147. *on 25 Aug 2011 at 7:08 pm*147 *Dan Meyer*

Hi **Sierra**,

> If a student gets a 2 on the first question and a 4 on the hard question, I believe their grade becomes a 4. How does this student make the grade a 5? Do you allow them to re-do the first question, or do they have the maintain a 4 on the next hard question or a retake hard question to acheive a 5?

The last option there.

> Also, do you define your categories by key skills or essential understandings?

I'm not totally clear on the difference.

> What do you do if you feel you cannot assess a concept in one question? Do you split the concept into smaller more focused categories or give more questions per topic?

On occasion I'll divide a concept into a couple of sub-questions, but in general I try to find a grain size that gives me and my students useful feedback while not overwhelming us with a zillion microscopic exams.

> Do you ever weigh some concepts more than others in the grading system?

No. There again it's a matter of calibrating the grain size so they're all roughly equal. That's an ongoing challenge.

148. *on 26 Aug 2011 at 10:20 am*148 *Sierra*

Thanks for your feedback. I am currently attempting to make a concept list for Algebra 1… difficult task.

149. *on 02 Sep 2011 at 6:38 pm*149 *At the Center of my Classroom | Study of change*

[...] the curriculum and require mastery. Similar to what is brilliantly laid out by dy/Dan (in 2007) here . I have the complete support of my county, principal and administrator, and hopefully, [...]

150. *on 03 Sep 2011 at 2:47 pm*150 *First Days | Miss Pi*

[...] We're trying out Dan Meyer's concept quiz system in all high school classes, after it went over well in my Algebra 2 and AP Calc classes last [...]

151. *on 06 Sep 2011 at 6:58 pm*151 *James Cleveland*

Dan,

I know this assessment method has problems with synthesis, as has often been pointed out, but I just had a thought and was wondering what you thought about it, if it might work.

The details are shaky, but imagine your grading system went up to 6 instead of 5. You still have the normal 1-4 scale, and they get 5 for mastery when they have gotten two 4s.

But after they've gotten enough 4s and 5s, you can start giving them questions that synthesize a bit. If a student can solve a question that involves the Pythagorean Theorem and the Surface Area of Cones (as you mentioned once), and then on another problem they can solve a problem that involves that Pythagorean Theorem and Ratios, then they might know how to synthesize the Pythagorean Theorem into other problems, and so on the checklist they get a 6 for it.

That way you can still have the checklist for each concept, but include the synthesis and still see which concepts are giving problems. If a student has a 5 on both the Law of Sines and the Law of Cosines, but can't get a 6, their problem might be knowing when to use which, and that's what you can remediate.

Maybe you can even make the "unit test" that is full of synthesis, using the grid system I though about here: http://rootsoftheequation.wordpress.com/2011/06/26/facts-in-five/ So you can check synthesis on 10 topics at once by grading the rows and columns.

152. *on 06 Sep 2011 at 7:02 pm*152 *James Cleveland*

Oh, as an afterthought, turning the dial up to 6 would also extend the number of times they have to work on a concept, which might help with long-term storage.

153. *on 07 Sep 2011 at 9:52 am*153 *Dan Meyer*

Interesting idea, **James**. I'm hesitant, though. This plan means a student who demonstrates conceptual fluency with a single technical error (a score of 3) will have *failed* the concept (3/6 = 50% = F). That's troubling.

154. *on 07 Sep 2011 at 5:07 pm*154 *James Cleveland*

But isn't 3/5 = 60% still failing, since you need 65%? Or is 60% passing in California?

I also feel that if someone is consistently making an error (since if they didn't make an error in the future they would have a 4), that does mean they don't grasp the concept enough to be passing. It might also need to change the idea of the "harder" problem, since there would now be the synthesized problems as "harder" problems.

155. *on 14 Sep 2011 at 9:49 am*155 *Matt*

Great model of assessment. I am in the midst of changing to your model. I am wondering what you think of a student who loses a certain concept over time but performed well earlier.

For example, if a student scores a 4/4 on concept A. Then 5 weeks later scores a 2/4 on concept A. It is my inclination to make his current level < 4. How can we say that he is a 4 in this concept still? I understand students forget, but I still would like to keep these concept levels as accurate as possible while he/she is still in my class. Thoughts?

Does the example above happen a lot for you?
Why is it not worth doing?
Is it too overbearing to do this?

Sorry if you've already discussed this somewhere and I missed it.

156. *on 14 Sep 2011 at 9:58 am*156 *Matt*

I missed the part about changing the points possible to a 5. Looks like this is how you built it in.

157. *on 15 Sep 2011 at 6:39 am*157 *Dan Meyer*

Hi **Matt**, it's a good question and there actually is a fair amount of debate in the SBG community on this point: "Can grades go down?" Because the problem gets *harder* from the first time they see the concept to the second, I decided their grades wouldn't drop. It's *expected* that some will have difficulty with a harder problem. That's why the possible points goes to a 5.

To answer the question, "what do students remember at the end of the year?" I analyzed some data here.

158. *on 17 Sep 2011 at 1:59 pm*158 *Brian*

I can see how this discourages cheating in the long run but as for the short run, how do you prevent students copying test questions from their neighbor? Do you make multiple test forms and change the numbers?

159. *on 18 Sep 2011 at 8:40 am*159 *Dan Meyer*

> **Brian**: Do you make multiple test forms and change the numbers?

Wait. Why would I do that?

160. *on 19 Sep 2011 at 8:21 pm*160 *Brian*

If all of the concept quizzes are identical, it seems like it'd be difficult to keep cheating down (i.e., students copying answers during a test). I've often used multiple test forms, so the person next to them doesn't have the same questions, which at least complicates cheating, though of course it isn't perfect. I like the concept quiz idea but I'm wondering how to prevent covert copying.

161. *on 19 Sep 2011 at 8:31 pm*161 *Daniel Schaben*

I generally have four versions of each concept when I give one of these concept tests where I just slightly change the question. For instance if I ask for slope I will give different ordered pairs on each test . . . etc. Although this does not eliminate cheating. It at least makes it more sophisticated cheating when they do cheat :)

162. *on 25 Sep 2011 at 8:20 am*162 *ND*

still not clear on a few things:

1) how would you convert the assessments into percents?

2) if 3/5 is 60% why would a student be motivated? if they make one careless mistake they fail?

3) how does their report card look – an average of all their assessments or is there a list of 10 concepts and a mark for each?

163. *on 25 Sep 2011 at 10:44 am*163 *Anne*

Dan,
You give a end of term test to check for retention, yes? How is this scored? I'm thinking that if I cover 12 concepts in one quarter, I will give them a 12 question test, and make it worth 48 points. Then I will score each question out of 4 points. What do you think?

164. *on 25 Sep 2011 at 1:33 pm*164 *Dan Meyer*

> 1) how would you convert the assessments into percents?

100 * points earned / points total.

> 2) if 3/5 is 60% why would a student be motivated? if they make one careless mistake they fail?

Christopher Danielson raised this one earlier and I don't think I have a fully satisfactory response. But for one try, 60% is a D-, not an F. For another, if they've tried twice and still commit technical errors, a D- isn't all that inaccurate a description. Finally, they're motivated because, as with all things SBG, that D- is fluid and can improve at any time.

> 3) how does their report card look – an average of all their assessments or is there a list of 10 concepts and a mark for each?

That's what their parents see when they check the student's grade online — 15 concepts and a mark from one to five for each. When the school sends out report cards, though, I balance assessments / final exam / homework at 70 / 10 / 20 and create an aggregate.

@**Anne**, that's basically what I do. Just to clarify: I weight those points at 20%, though, not 70%. (See paragraph immediately preceding.) I also include my department's short, objective exam.

165. *on 25 Sep 2011 at 2:17 pm*165 *Anne*

That is how I've set it up, Dan…..all stolen from you, the Master of SBG!

Thanks!

166. *on 25 Sep 2011 at 2:45 pm*166 *Anne*

Final question of the day!!

When you give them assessments over 1-6 concepts, do you number them by the concept number? For example, if you assess concepts 3-8, does your assessment begin with

3.
4.
5.
…….

167. *on 25 Sep 2011 at 2:58 pm*167 *Dan Meyer*

Exactly right.

168. *on 25 Sep 2011 at 3:56 pm*168 *ND*

Dan:

well my school does not have an online way parents to see the grades so i'm concerned that they'll see an average score of the SBG and what did i gain?

i still want to try it this way…maybe i can have an insert into the report card with a detail of each concept

169. *on 25 Sep 2011 at 5:37 pm*169 *Tina*

ND, perhaps you could have the parents initial their student's concept checklist every so often. That way you can be sure the parents are seeing the progression and exactly what is going into that report card grade.

I started this at the beginning of this school year and I have to say that this is the most profound change my classroom has ever undertaken and I am very impressed with how it is going. The concept checklist has been a very important tool in terms of communication between school and home. I made a big deal of it at back to school night and told the parents to check their students' orange folders (that's where I have them keep all their sbg stuff) often. The parents love it and I can tell they are keeping an eye on that folder from the types of emails I am getting. It is better information on their kids' progress than they have ever gotten before.

Tina

170. *on 25 Sep 2011 at 5:58 pm*170 *Dan Meyer*

@**Tina**, awesome feedback. Really glad to hear it. I've added your comment to a "Testimonials" section in the original post.

171. *on 26 Sep 2011 at 3:34 pm*171 *ND*

Thanks Tina and Dan for your responses, I'm looking forward to trying this in my classroom starting with tomorrow's quiz

172. *on 26 Sep 2011 at 3:57 pm*172 *Anne*

Dan,
I think I have missed something critical. Are your summative assessments Always out of 5 points? In my gradebook, I have an entry for each concept out oilfield 4 points. Then I have another entry, out of 5 points, when the students gets two 4s. This isn't accurate, is it?

173. *on 26 Sep 2011 at 4:04 pm*173 *Dan Meyer*

I'm not sure what you mean by summative assessments here, Anne. I can say, though, that in my gradebook, at the end of the year, every concept is listed *once* and they're all out of five possible points. It sounds as though you have each one listed twice.

174. *on 26 Sep 2011 at 4:13 pm*174 *Anne*

So if a kid has a 3 on an assessment, it's a 3 out of 5?
if a kid gets a four, it's an 80% until they get their second 4, at which time it becomes a 5 out of 5?

175. *on 26 Sep 2011 at 4:26 pm*175 *Dan Meyer*

Right.

176. *on 09 Oct 2011 at 9:58 am*176 *Tim*

Lots of really good stuff in here that is making me re-assess (no pun intended) the way I think about assessment. Two things are keeping me from saying "I want to implement this now!" The first is that based on your sample tests it doesn't seem like you're getting much higher than level 3 (Application) in Bloom's Taxonomy. The second is that you tell them exactly what type of problem they're going to be solving. This works right into memorizing steps instead of learning concepts and feels like it goes against everything you were saying in your TED Talk.

177. *on 09 Oct 2011 at 3:09 pm*177 *dy/dan » Blog Archive » Five Lessons On Teaching From Angry Birds That Have Nothing Whatsoever To Do With Parabolas*

[...] After your birds get defeated, you have to wallow in your failure only as long as it takes you to press the huge undo arrow. Once you're successful, that's all the game remembers. Your losses aren't stored anywhere. They aren't weighted against your successes when the game tallies your final score. [...]

178. *on 09 Oct 2011 at 3:38 pm*178 *Krystle*

Dan,

I really like this idea. The one thing that is bothering me (and it was mentioned in earlier comments) is that a 3/5 = 60% or a D. You said, "a three is perfect conceptual understanding with minor mechanical errors." Do you agree that this kind of understanding warrants a D grade? Would a C be more appropriate? I think that a D is a very poor grade (barely passing) and a student who has a perfect conceptual understanding of a concept deserves a little better. Or maybe I just need you to clarify what you mean by "minor mechanical errors."

So, the only solutions I could think of would be using 0.5 increments (like a 3.5/5 = 70% C) or using an 8-point scale. Two 8′s would become a 10. Perfect understanding but minor mechanical errors would be a 7 or 6, depending on how "minor" the error. At least this way you could differentiate between the D's and the C's.

What do you think?

Oh yeah, one more question. Do your students need to get two 4′s in a row or two 4′s in any particular order to get a 5?

179. *on 09 Oct 2011 at 6:45 pm*179 *Christopher Danielson*

Letting Dan off the hook (but perhaps putting words into his mouth) I'll follow up on **Krystie**'s question over at my place.

180. *on 14 Oct 2011 at 12:12 pm*180 *Mark Grogan*

Krystle,

I think Dan mentioned that he does not require the 4s to be consecutive in order to obtain a 5, though certainly you can choose to implement that restriction.

As far as the 3/5 issue goes – I think it is probably reasonable since the students can choose to reassess. If you think the points are two low for the situation ("a three is perfect conceptual understanding with minor mechanical errors") then you could decide to give half points, i.e., make that score 3.5/5 on your own grading rubric. I think the 1-5 scale is excellent for this kind of application, but you could also change to

x/10 or x/100 and work out a similar scale.

@Dan – I have been reading your blog for the last week or two. Thanks for all of the fantastic information. You've convinced me on the merits of SBG, now I just need to figure out how to get it to fit within the heavily structured grading outlines that I am given from on high.

181. *on 14 Oct 2011 at 7:18 pm*181 *Krystle*

Mark! I don't know exactly what you meant by getting SBG to "fit within heavily structured grading outlines" but I'm guessing it has something to do with making SBG work with a traditional percentage grading scale. If so, Emily, on Christopher Danielson's website (posted above), mentioned a way to make this work.

She uses a 4-0 scale, which equates to A, B, C, D, F. To solve the problem of percents not making sense (3/4 = B = 75%), she doubles the score, then adds 11 and puts the total out of 20. Or you can just add 5.5 and make it out of 10. Does the same thing in terms of percents. Yes, it is more work than simply typing in a student's score, but I think it's worth the extra second or two.

Hope this helps. Makes sense to me and "bridges the gap" between SBG and a traditional percent scale.

182. *on 26 Nov 2011 at 12:43 pm*182 *Humanities and the DY/DAN Method « Seems Like Teaching*

[...] Meyer has a famously-interesting perspective on grading and homework. In a recent post, he offers a scenario of a student (Aaron) who has only attended 20% [...]

183. *on 30 Jan 2012 at 3:01 pm*183 *a different eric*

NOW… I have a little problem. I'm trying to make my concept quizzes harder for Geometry. Take volume for instance. I tried a little something out today to see what would happen. The kids needed to know the height of a pyramid, but I gave them the slant height instead, hoping they would realize they need to calculate it with the pythagorean theorem first. I know they know the pythagorean theorem, but they just overlooked it.

I know that's combining concepts, but I can't figure out how to make volume, surface area, or any problems like that MORE difficult without adding in a previous concept.

This has to make sense to you… because I know you've had the same problem.

What did you do?

184. *on 30 Jan 2012 at 3:03 pm*184 *a different eric*

oh… and when I say harder… I mean, the question for the 2nd time they see the concept.

185. *on 30 Jan 2012 at 5:37 pm*185 *mr bombastic*

@Eric, I like your idea of combining more than one concept. You want students to view using more than one conept in a problem as routine. If you get too carried away with this, though, it just turns into an intelligence test.

186. *on 30 Jan 2012 at 7:25 pm*186 *a different eric*

@itsbombasticfunnyfantastic, I like your reply… but doesn't that defeat the purpose of standard based

grading? What if the kid misses the question because of the pythagorean theorem?

Let me reply… she should already KNOW the pythagorean theorem… so it's a matter of not slowing down and reading the problem. Not the conceptual misunderstanding. It's like making an Order of Operations problem harder by adding in negative numbers. Are you adding two concepts in there? Yes… but the negatives are supposed to be mastered by now.

187. *on 23 Feb 2012 at 11:49 pm*187 *Jonathan Perry*

I love your ideas and am thinking about implementing it this year, but I'll use it for next year for sure in my Geometry courses.

I noticed on your comprehsive tests that there are multple parts a, b, c, etc for each question number.

http://www.mrmeyer.com/blog/wp-content/uploads/070830_5.pdf

On your weekly tests do you just put 1 part or are there multiple parts on each number? If there are multiple parts do you try to give a 1-4 score for each part or just an overall score for the whole question?

Also, at my school we use the following grading scale:

A = 93 – 100
B = 85 – 92
C = 77 – 84
D = 70 – 76
F = Below 70

Should I adjust the percentage scores I give for a 3/4. 3/4=75% which is a C for most schools but it would be a D in my county. If I use your system, it seems harsh that a student who just barely missed a question is "rewarded" with a D in my school disdtrict. I was thinking of scaling the percentages as follows:

4/4=100% A
3/4=80% mid C
2/4=60% hi F
1/4=30% F

5/5=100 A
4/5=85 low B
3/5=75 hi D
2/5=45 F
1/5=35 F

Am I crazy to try to adjust these percentages to my county's grading scale? Maybe I should just not use a 1-4 grading rubric. What do you think?

188. *on 24 Feb 2012 at 10:14 am*188 *gasstationwithoutpumps*

@Jonathan Perry, why should the grading result in a number? If you are thinking that 3/4 should be a C, then call it C. If you are thinking that 2/4 should be D, then call it D. What is the obsession among so many math teachers and SBG teachers of assigning numbers to categories?

Personally, if I were creating a grading system that I wanted kids and parents to understand, I'd use

A,B,C,D,F, as the grades, not percent and not arbitrary other categories. I realize that this has gotten difficult in places with rampant grade inflation, since there are no grades other than A for average.

189. *on 24 Feb 2012 at 11:10 am*189 *a different eric*

@gasstation
Sometimes the school district MAKES you put in a grade. It doesn't matter how WE feel about it. I have no "obsession" with assigning numbers to categories… but we have to. So sometimes we have to look for a work-around.

190. *on 02 Mar 2012 at 10:29 am*190 *Ok. I've Begged, Borrowed and Stolen. Now What? » A Different Way to Grade*

[...] is one I stole from a brilliant high school teacher that I've been following for a few years. In my opinion, he has developed an amazing form of [...]

191. *on 15 Mar 2012 at 6:45 am*191 *lesanno*

I first read over your assessment plan a couple months ago and have been a fan of it in theory, passing the idea along to others at my school. But this morning a potential loss occurred to me: the old, unwieldy chapter test has many flaws, but I do recall it being effective in my education at getting me to combine a series of ideas/topics into some sort of whole. Your assessments can show whether a student can compute the law of sines when there is a nice big label on the problem saying, "SOLVE THIS PROBLEM USING THE LAW OF SINES," or, even worse, "PLUG THESE NUMBERS INTO THE LAW OF SINES EVEN IF YOU DON'T UNDERSTAND WHY." Where is the opportunity to teach/assess whether students can choose the law of sines as the best math tool when presented with a triangle? Where is the opportunity to require students to combine and develop different concepts? For some students, requiring that kind of thinking on a test leads to severe anxiety, but for others it is the strongest available motivation for them to commit to a cognitively intense activity.

So now I'm envisioning some sort of hybrid: weekly concept tests as you've described, plus semi-regular cumulative (midterm-like) exams. Where would you come down on a proposal like that?

192. *on 15 Mar 2012 at 7:50 am*192 *Dan Meyer*

Law of sines / cosines is a fairly unique conundrum that we've kicked around this blog before. I'm not convinced the problem spreads wider than that.

193. *on 15 Mar 2012 at 10:42 am*193 *josh g.*

Another possibility, which has pros and cons of its own, is just to remove the label from those questions. You can point out which is which after the fact.

194. *on 16 Mar 2012 at 1:11 pm*194 *mr bombastic*

I think SBG is usefull in some instances, but it is sometimes difficult to tell how much students understand and how much is just pattern recognition for different types of problems.

Keith Devlin has an interesting post on his blog that references this apparently well known study from the 1970's: http://www.wou.edu/~girodm/library/benny.pdf .

In it is described a student that demonstrated mastery by getting 80% or better on a series of assessments that test individual skills or concepts. The student was very good at finding ways to answer the questions

correctly, but had some serious misunderstandings about the content. It is a quick read and both amusing and interesting.

I think the study is relevant to some of the dangers of relying too heavily on assessments that test skills individually – even if the assessments are more thoughtfully done than the very low quality assessments in a heavily used online program.

195. *on 16 Mar 2012 at 3:29 pm*[195] *Timon Piccini (@MrPicc112)*

I had a chat over tea with my professor last year about the very same issue. She basically said, "If you want to assess students ability to choose a proper route for solving a problem, make that one of your standards."

Those are separate skills that can and should be assessed, and you as a teacher need to make the decision what standards you want to track (you could easily make hundreds of standards to track each year).

196. *on 16 Mar 2012 at 4:29 pm*[196] *a different eric*

@Timon
Well said. I've been thinking the same thing…

197. *on 18 Mar 2012 at 6:46 am*[197] *mr bombastic*

How do you assess whether a student can choose a proper route for solving a problem using SBG? That sounds like either giving them a random problem, or an assessment with many types of problems – which doesn't sound like SBG.

I don't think LOS/LOC is so unique. Testing factoring vs square roots vs quadratic formula separately is easier for students because they know ahead of time which method will work (i.e. they don't use square roots to go from x^2 + 2x = 9 to x + 2x = 3). Similar issues come up with perimeter and area or surface area and volume.

It is a huge hint to tell students what procedure to use. SBG is fine for checking whether a student can follow a procedure, but it is much more difficult to determine whether they understand the procedure itself, or at least when to apply the procedure. One thought is to regularly include problems that can't be done using the procedure being tested and have the students write that they can't do the problem in those instances.

198. *on 18 Mar 2012 at 9:02 pm*[198] *Timon Piccini*

@mr bombastic

Great examples, let's take a look at volume/SA.

If assessing volume ask, "Find the volume of the cylinder."
If assessing SA ask, "Find the Surface area of the cylinder."
If assessing their ability to choose ask, "How much material is needed to make the following pop can?"

Or something along those lines. That was a quick lame example, but I feel illustrates the point. With the first two standards I can see whether or not they can do the procedure, which for many students is difficult enough. The third question gives the student a decision to make; does the surface area or the volume tell me how much material is needed for the pop can?

199. *on 26 Mar 2012 at 8:04 am*[199] *Alaine Ciriaco*

Thanks for the wonderful article, I was searching for details like this, going to check out the other articles.

200. *on 18 May 2012 at 8:45 am*[200] *Peter*

Hi Dan,

I think that tracking assessment of distinct concepts to show growth and highlight areas that need to ba addressed is a powerful use of assessment. Similarly, basing your final evaluation on the final level of achievement also makes clear sense.

I was wondering, however, why you focus so heavily on concept mastery, but do not assess students on the development of their ability to use the math processes? Your teaching ideas seem to rely heavily on problem solving, representing and modeling, reflection and selecting appropriate tools and strategies. Shouldn't you include assessment and feedback to your students on these areas as well?

201. *on 18 May 2012 at 5:16 pm*[201] *Dan Meyer*

@**Peter**, I emphasized those processes in our classwork, and gave students qualitative feedback on their strengths and weaknesses, but I never found a good way to quantify those processes for standards-based grading.

202. *on 23 May 2012 at 5:26 am*[202] *Anne*

Dan,
I just realized that this is where I should have posted my question:
Type I items that address basic details and processes that are relatively easy for students
Teacher asks: about this measurement topic, what are the basic details and processes students should understand or be able to do fairly easily if they were paying attention in class?

Type II items that address more complex ideas and processes and are more difficult for students
Teacher asks: about this measurement topic, what are the more complex ideas and processes students should understand and be able to do if they were paying attention in class?

Type III items that require students to make inferences or applications that go beyond what was taught in class
Teacher asks: about this measurement topic, what inferences and applications might students be able to make even though they go beyond what was taught in class?

Dan,
Concerning the above information, on my summative assessments, should I include "three-part questions" for each of my concepts?
Completing my first year of implementing SBG, I am beginning to reflect on what I might need to do differently next year. I am afraid my assessment questions might not always be authentic.

Another question? Because standardized testing is such a big deal in the state of KY, particularly End-of-Course exams and the ACT, should I include any multiple choice questions on my summative assessments?

203. *on 23 May 2012 at 9:14 pm*[203] *Dan Meyer*

It's an interesting idea, **Anne**. I'm afraid I don't have much experience using SBG to assess the Type II and Type III items, though. I hope you'll let us know how it goes.

204. *on 27 May 2012 at 4:01 pm*[204] *Break down, go ahead and give it to me… | Math Differently*

[...] by Dan Meyer's Comprehensive Math Assessment Resource How do your class grades break [...]

205. *on 08 Jun 2012 at 7:47 am*[205] *@MathDifferently*

I'm trying SBG out for the first time with my summer school Geometry class. I figure they're good guinea pigs. I'm struggling with workflow as it is and I want to make sure I've got things in place to successfully start with this next school year (and not over-burden myself in the process…I'm known for developing fabulous plans that end up being way too hard to implement and quickly abandoning them.)

I'm struggling to decide if, during the school year (at least the first year) I want to just give them level 1 assessments in this way or if I want to do the two-level version. I'm committed to giving (small m/c) department cumulative assessments about every other chapter and district multiple choice benchmarks at the quarter marks (quarter 2 and 4 usually serving as the final). I know that the district benchmarks are very CST like (CA's standards assessment). They're set for next year. I'm happy with them (at least in Geometry…I haven't seen Alg 2). I'm thinking that given those commitments, that level 1 will be enough AFA my concept checklist driven tests go.

I am thinking that, while it won't be a one-to-one mapping of what gets assessed at that higher level compared to the lower level on the concept checklist, it'll be assessed. **The question comes up as to how to allow students to improve their grades on those higher level concepts.** Do I map the common assessment questions onto my lower level concepts on my checklist? Do I treat each as their own mini-concept checklist and let them remediate and re-test on those? (seems like too many balls in the air)

206. *on 08 Jun 2012 at 10:32 am*[206] *My Final Exam « The Roots of the Equation*

[...] in Five and how I thought the scoring system would be helpful for my assessments. I had also been having thoughts about the way to measure synthesis while using SBG. So I thought having a final exam specifically designed to measure synthesis would be the best way [...]

207. *on 09 Jun 2012 at 6:13 am*[207] *Reflecting on my First Week doing SBG and some Flipping | Math Differently*

[...] DM's big assessment post again, I see where I've differed. Now I need to decide if I want to do what I've been [...]

208. *on 09 Jun 2012 at 12:32 pm*[208] *Dan Meyer*

@**MathDifferently**, sorry, I think I'm confused about the different levels, or tiers, of testing you're referring to.

209. *on 11 Jun 2012 at 4:39 am*[209] *@MathDifferently*

You refer to students testing on each concept twice: once easy, once harder. That's what I meant. (ie: one test would have Question #5-harder, 6-harder, 7-easy and then the next test might be #7-harder, 8-easy, 9-easy)

I am considering having my own assessments just cover the easy level, knowing that the benchmarks and the department common assessments in between benchmarks will BE that harder level assessment and

aren't really optional.

210. *on 02 Aug 2012 at 11:36 am*210 *SBG: Standards « findingEMU*

[...] have traveled far down the path of Standards Based Grading. A LOT of people have written about it (here, here, and here) online, and I have taken bits and pieces to create something I am comfortable [...]

211. *on 06 Aug 2012 at 7:42 pm*211 *David*

These handouts look amazing. Is there a way I could get them as word documents?

212. *on 08 Aug 2012 at 7:25 am*212 *My Plan for SBG | Everything Rational*

[...] on the train and use Standards Based Grading. I first read about it through, of course Dan Meyer here. Definitely read through that and this if you aren't familiar with the system. I then poured [...]

213. *on 16 Aug 2012 at 7:38 pm*213 *Jill*

In a chapter or unit (algebra, geometry, or ?), how do you integrate SBG with "big picture" problems (like in 'Math needs a Makeover')?

214. *on 17 Aug 2012 at 6:31 am*214 *Dan Meyer*

Those problems are the context for learning the skills that I assess with SBG. ie. The water tank problem is a means to the end of assessing students' abilities with the volume of prisms. I don't assess them on the water tank problem itself, though.

215. *on 17 Aug 2012 at 7:32 am*215 *Jill*

Dan, Thanks for your quick reply. Do you introduce a new concept (such as volume of prisms) with a problem like the water tank, then have instruction/activities on skills, then assess (SBG), then go back to the water tank problem? I guess what I am looking for is the sequence and/or structure of how you "pull it all together" for a skill or unit. -Jill

216. *on 17 Aug 2012 at 1:17 pm*216 *Dan Meyer*

That sequence you describe is pretty spot-on. I don't introduce every concept with media like the water tank because not every mathematical concept lends itself to application in that kind of context. I do try to induce "perplexity" in a student before we resolve it with a new skill.

217. *on 23 Aug 2012 at 1:30 pm*217 *mathmom*

Hi Dan, I have a question about how the logistics of "second questions" on a topic work.

Any question they're seeing for a second time, though, give 'em a harder one.

When making up the daily assessment for the group, even if it's the group's 2nd assessment on a given topic, many of the students will not have achieved a 4 the first time, and thus may not be ready for a harder problem. How do you handle the logistics of this?

Also how many times will you put a topic on the daily assessment for the group? Just 2, or until most people have achieved mastery (and those who have just skip it)?

I'm a volunteer at a small private school. In the past I've taught mathematical problem solving and

"contest math" where the goal isn't necessarily "mastery" of anything, but rather taking a student from where she is to somewhere further along. But this year I'm teaching a small group (7 middle schoolers) the equivalent of honors Algebra I and I do want to make sure they achieve mastery (and hopefully retention) of the key concept areas. So I'm planning to use some version of your method, which I've loved since I first read your blog many years ago.

218. *on 26 Aug 2012 at 4:56 pm*218 *Leslie (@leslie_su76)*

Hi, Dan.

I am planning to implement SBG in my Basic Math class this year. This is a class for high school students identified with learning disabilities (LD's). My problem is developing the concept list. The kids in this class potentially can be at any level from grade 4 to grade 7. In fact, I am sure they will be at different grade levels depending on what the specific content is. The ultimate goal is to have them ready for pre-algebra (they would finish grade 7 CCSS by the end of the class). I absolutely love the idea of assessing discrete concepts, especially for students with LD's, and I was starting to do that last year long before I had heard much about SBG. I want to go full blast with this year.

For this class, I considered building a comprehensive concept list that would span all four years. I could then adjust the assessed concepts based on diagnostic testing. I also considered using just grade 7 standards to develop a concept list, but couldn't see how to make it work if they are currently at grade 4 level. Sigh. I don't want this to turn into an impossible task for my students or for me.

I suspect they can do more math than their standardized testing and placements suggest. They have low reading ability; too often I find that low reading ability skews the math test scores. That said, they do have documented, LD's that suggest slower processing, poor working memory, and poor recall.

I know you worked on remediation in your Algebra class, but perhaps not to this level. If you have any suggestions, I would appreciate them.

BTW – I really enjoyed your class on LOA and ACT I's in Limestone. I hope to convert the other teachers in my school.

219. *on 28 Aug 2012 at 7:48 pm*219 *Dan Meyer*

mathmom:

> When making up the daily assessment for the group, even if it's the group's 2nd assessment on a given topic, many of the students will not have achieved a 4 the first time, and thus may not be ready for a harder problem. How do you handle the logistics of this?

Good catch. Logistically, I can't handle it. Everyone gets the harder assessment, but I make sure students who aren't ready for it know they're more than welcome to skip that assessment until they are.

mathmom:

> Also how many times will you put a topic on the daily assessment for the group? Just 2, or until most people have achieved mastery (and those who have just skip it)?

Students will see each assessment three times, at which point I'll need them to stop by and re-assess outside of class time.

@**Leslie**, hey, good to hear from you. I usually found the concept-list creation process to be pretty

energizing and interesting, a time when you can say to yourself, “What is sixth grade math, *really*?” I never had to create lists for *four continuous years*, though. I highly recommend you petition for some release time for you and at least another teacher to work on that task. That’s a big deal.

220. *on 28 Aug 2012 at 8:25 pm*220 *I wish my teacher training had told me… | Solving Problems*

[...] sure everyone who’s reading this has already seen Dan Meyer’s grading for mastery, http://blog.mrmeyer.com/?p=346 , but I’m going to keep repeating it ’till I get hoarse. Just introduced it today in [...]

221. *on 29 Aug 2012 at 6:24 am*221 *Torre' Mills*

Dan,

I am trying to do use this type of assessment in my math 2 class this year (combination of alg, geom, and statistics). I am trying to pull up you suggested concept list for geometry and it did not pull up.

Did the link to it change or is it no longer available.

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