Meaningful Assessment of Students by Teachers:
A Response to CSAP

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CSATT

(Colorado Student Assessment by Teachers Test)

(Short Version)

PART I: MULTIPLE CHOICE

1. When you grade a 5-point problem, you ensure that

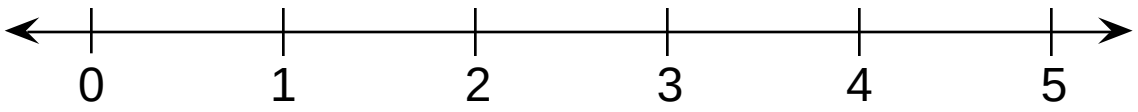
(a) Students gets 4 out of 5 if their answers provide 80 percent of the evidence of understanding of a student who gets full credit.

(b) Students who get 2 out of 5 provide exactly half the evidence of students who get 4 out of 5.

(c) Students who get 3 out of 5 have supplied an amount of evidence exactly halfway between that of students who get 2 and students who get 4.

(d) None of the above.

The set of Integers form an interval scale:



2. A student earns a grade of “B” in your class. This student:

(a) knew most of the mathematics taught during the course, but not as much as someone who earned an “A”.

(b) knew all of the mathematics taught during the course, but had an “effort” record that dropped the final grade to “B”.

(c) knew as much mathematics as other students who earned a “C”, but had an “effort” record that raised the final grade to “B”.

(d) Any of the above may be true.

PART II: FREE RESPONSE

A student has an 84 percent average on quizzes and tests for the semester. He gets a grade of 86 percent on the final exam. His homework average is only 50 percent, though, because he failed to submit almost half the assignments. If quizzes and tests are worth 60 percent of the semester grade, homework is worth 20 percent, and the final is worth 20 percent, what is this student's semester grade?

Some Assessment Principles

- Assessment is the process of gathering and reporting evidence of students' developing mathematical understanding
- Assessment should build a data base of evidence from a variety of sources
- Data should never be "cancelled out"
- Data from different sources, or about different kinds of understanding, should be kept dis-aggregated as long as possible
- Assessment = *Documented* Instruction
- There is no such thing as *objectivity* in assessment; however, there must be consistency and validity

Plan assessment as you would plan instruction:

- What is the mathematics I want to assess?
- What are my expectations for student understanding?
- What evidence will meet my expectations?
- What sources of evidence will I use?
- How will I document the evidence I collect?
- How will I use the evidence I collect to report the results of assessment?

MTH 1610/2620 Integrated Mathematics I/II Assessment Framework

The "Big Ideas" of the Courses:

- Mathematical problem-solving, reasoning and communication;
- Algebraic thinking, including patterns and their identification, representation, analysis, manipulation, generalizations and extensions;
- Geometry and measurement concepts;
- Counting principles, probability and statistics;
- Number systems and computational algorithms.

Sources of Evidence:

- In-Class written assessments
- Collected and Assessed Problems (CAPs)
- Daily Class Work
- Analyses of Mathematical Thinking (AMTs)
- Final Exam

Criteria for Grades:

To earn a grade of “B” in the course, students must have:

- missed no more than 3 weeks of the course due to absence (except as approved by the instructor);
- submitted all CAPs and AMTs within one week of the initial due date;
- taken the final exam; and
- provided sufficient evidence of understanding of each of the big mathematical ideas of the course.

Students will have provided sufficient evidence for a grade of “B” if they have met the standard on each of the CAPs and provided some additional evidence for each big idea from at least one other source. Evidence missing because a CAP did not meet the standard may be provided through any of the other sources of evidence.

To earn a grade of “A” in the course, students must have:

- met all of the criteria for a grade of “B” listed above, and
- provided sufficient additional evidence of understanding for at least 3 of the course’s big mathematical ideas.

  Students will have provided sufficient additional evidence for a big idea if the quality of their work on the appropriate CAP exceeds the standard set for that CAP, or if they have provided substantial evidence of understanding for that big idea from at least three different sources.

Students who have not met all of the criteria for a “B” in the course will earn a grade of “C” – the lowest passing grade – if they have missed no more than 5 weeks of the course due to absence (except as approved by the instructor) and they have provided sufficient evidence of understanding of at least three of the big mathematical ideas of the course.

Students who have not met the minimum criteria for a “C” listed above will receive a failing grade for the course.

Scoring Guide for CAPs

Each CAP you submit should include:

- your name on every page;
- a statement, in your own words, of the problem;
- the processes you followed in your work on the problem, e.g., how you got started, the assumptions you made, what you tried, what worked, what did not work, any diagrams, tables, graphs you made;
- your solution and justification

The following general criteria will be used to score your work:

Level	Criteria
Meets the (M) Standard:	Correctly answers the questions posed. Demonstrates working understanding of the important mathematical ideas underlying the problem by: • explaining answers; • describing processes followed to arrive at answers; • justifying answers and processes.

A "correct" answer follows logically from the assumptions you make and the processes you use to obtain it, and has been justified by you.

Level	Criteria
Exceeds (E) the Standard:	Meets the criteria for (M) and goes beyond them in at least one of the following ways: • depth and clarity of response makes a compelling case for the writer's answers; • Justification includes specific and appropriate references to analogous problems explored during the semester; • responses illustrate understanding of concepts underlying the problem beyond those necessary to meet the standard;

Level	Criteria
In Progress:	A "first draft" that does not meet all of the criteria for (M): • Some aspects of the problem have been addressed but not completed. • Some of the mathematical ideas underlying the problem have been identified but not followed through completely. Some revision of the work already done is needed for work to meet requirements for (M). Papers will not be scored, and teacher feedback will focus on those areas that need to be revised.

Scoring Guide for "On-Demand" Problems

Each question will be graded in its entirety using the following general criteria:

Score	Criteria
Meets the Standard: (M)	• Response is clearly written and correctly answers the questions posed; • Justification is presented to support the response.
Partially Meets the Standard: (+)	Does not meet all of the criteria for (M). Minor errors, but there is some evidence of understanding of the big idea(s) addressed by the problem.
Below Standard: (–)	Does not meet the criteria for (+). Major errors, or absence of any evidence of how answers were obtained.

Assessing Daily Work

P makes a Presentation to the entire class from the front of the room	Q asks an important Question during a discussion or presentation
C Contributes to the class discussion in a way other than by presentation	I provides a mathematical Insight during a discussion or presentation

Codes may include subscript numbers that correspond to the course's big ideas.