

## Analyzing An Assessment for Quality— Key 1, Purpose, Key 2, Targets, and Key 3, Design

1. In your small group choose any **one** of the four sample assessments on the following pages.
2. Using the separate rating form, *Evaluating a Classroom Assessment Using the Keys to Quality Assessment*, *individually* evaluate the sample for quality on the first three keys. In the spaces below, write down your rating and the reason for it using words or phrases from the rating form.
3. Compare your analysis to others in your group. Resolve discrepancies.
4. Give advice to the author of the assessment: what are the assessment's strengths and what might she do to make it better?

Assessment Title	Key 1: Purpose	Key 2: Targets	Key 3: Design
<b>Mathematics Assessment</b>			
<b>Fish Tank</b>			
<b>Culminating Project</b>			
<b>Emerson Essay Test</b>			

## Sample #1: Everett Math Assessment and Instructional Guide-Grade 6\*

Everett School District administers a mathematics problem solving assessment to students in various grade levels. This assessment consists of two math problems given to students to solve. (Sample Grade 6 problems are attached.) Responses are scored with a four-trait rubric (also attached here).

In addition to providing information to decision makers, Everett also publishes booklets for various grade levels, the goal of which is to “provide meaningful information back to teachers on how our students performed on this assessment, how those results can be used to better inform math instruction, and how to improve student performance on future assessments” (p. 4).

The 90-page , Grade 6, 2002 booklet includes the following

- The rubrics used in Everett to assess mathematics problem solving responses on the district assessment.
- The relationship between these rubrics, the rubrics used on the state assessment, and state content standards.
- Results of Everett’s 2002 assessment.
- Description of the problem solving process in student-friendly language.
- The rubric translated into a checklist for student use.
- 20 pages of scored student responses to the mathematics problems given to students.
- 20 pages of student responses on which to practice scoring, with instructions on how to use them instructionally with students.
- Instructional strategies for teaching problem solving.
- Description of legitimate test-preparation strategies.

Following are some examples of the materials included in the Grade 6 booklet.

### Mathematics Problems Used in the 2002 Grade 6 Math Assessment

Prompt A:

Michael’s mom went shopping for new school supplies and bought weven items totaling \$23. She bought some pens that cost \$2 each and some books that cost \$3 each. She also bought some binders at \$5 each.

How many of each item did Michael’s mom buy?

Show how you got your answer.

Explain your thinking at each step using words, numbers or pictures.

Show how you checked your work and calculations for accuracy and reasonableness.

Prompt B:

A ball is dropped from a height of 80 feet. Each time it hits the ground it bounces back up one half the previous height.

How high will the ball bounce after the 5<sup>th</sup> bounce?.

Show how you got your answer.

Explain your thinking at each step using words, numbers or pictures.

Show how you checked your work and calculations for accuracy and reasonableness.

## Four Trait Mathematics Assessment Rubric, Adult Version

<p><b>Conceptual Understanding (CU)</b>  <b>“What’ of it”</b></p> <p><b>A. Understanding of problem is...</b>  5 THOROUGHLY demonstrated.  4 BASICALLY demonstrated.  3 PARTIALLY demonstrated  2 INCORRECTLY demonstrated.  1 Not demonstrated.</p> <p><b>B. Problem information/data are...</b>  5 Used CLEARLY &amp; WELL.  4 Used ENOUGH.  3 MOSTLY used.  2 Used INCORRECTLY.  1 Not used.</p>	<p><b>Process &amp; Strategies</b>  <b>“How’ of it”</b></p> <p><b>A. Graphs, pictures, or models...</b>  5 VERY CLEARLY support the solution.  4 Support BASIC solution.  3 PARTIALLY support the solution.  2 Are NOT CONNECTED to the solution.  1 Are Missing.</p> <p><b>B. Strategy/Skills are...</b>  5 MULTIPLE and appropriate to problem.  4 APPROPRIATE to problem.  3 PARTIALLY appropriate to problem.  2 INAPPROPRIATE to problem.  1 Missing.</p> <p><b>C. Plan is/does...</b>  5 EFFECTIVELY IMPLEMENTED to find solution.  4 APPLIES to problem.  3 Applies to PART of problem.  2 Not apply to problem.  1 Missing.</p>
<p><b>Communication of Reasoning (CR) =</b>  <b>“Explain it”</b></p> <p><b>A. Math terms are...</b>  5 ALL used correctly.  4 MOSTLY used correctly.  3 PARTIALLY used correctly.  2 Used INCORRECTLY.  1 Not used.</p> <p><b>B. Math terms are...</b>  5 ALL used correctly.  4 MOSTLY used correctly.  3 PARTIALLY used correctly.  2 Used INCORRECTLY.  1 Not used.</p> <p><b>C. Math terms are:</b>  5 ALL used correctly  4 MOSTLY used correctly  3 PARTIALLY used correctly  2 Used INCORRECTLY  1 Not used.</p> <p><b>D. Math terms are:</b>  5 ALL used correctly  4 MOSTLY used correctly  3 PARTIALLY used correctly  2 Used INCORRECTLY  1 Not used.</p>	<p><b>Accuracy &amp; Reasonableness (AR)</b>  <b>“Defending/Connecting it”</b></p> <p><b>A. Calculations/diagrams are...</b>  5 COMPLETELY accurate.  4 BASICALLY accurate.  3 PARTIALLY accurate.  2 ATTEMPTED, but incorrect.  1 Missing.</p> <p><b>B. Solution is...</b>  5 Justified, verified, AND extended.  4 Justified, verified, OR extended.  3 PARTIALLY justified, verified, or extended.  2 UNSUCCESSFULLY justified or verified.  1 Missing or there is only an answer.</p> <p><b>C. Connections are...</b>  5 Made between solution and general situations.  4 BASICALLY made.  3 PARTIALLY made.  2 ARE ATTEMPTED  1 Not made.</p> <p><b>D. Work is...</b>  5 Checked a DIFFERENT way.  4 Checked same way as originally  3 Checked SOMEWHAT  2 Checked with INAPPROPRIATE method(s)  1 Not checked.</p>

## Assessment Sample: Fish Tank<sup>3</sup>

**Intended Grade Level:** Grade 5

**Description:** The following lesson/assessment is about how to set up an aquarium. The lesson has two parts. In part one the students read an information sheet and then observe the instructor actually setting up a new tank. In part 2, students work in small groups to actually set up a tank using the directions provided by the instructor. We have attached a set of test specifications to guide the development of a test, and the test the instructor developed to assess student learning.

### Test Specifications Chart (Blueprint)

Content	Knowledge	Analysis	Inference	Evaluation
Setting up a new fish tank	10	5	15	20

### Unit Test—Multiple Choice

<p>1. About how much gravel is needed in a new tank?</p> <p>a. About 10 pounds.</p> <p>b. *About 10 pounds for every 10 gallons of water.</p> <p>c. It depends on the size of the tank.</p> <p>d. About 1,000 pounds.</p>	<p>5. If you add fish to a new tank too soon, which of the following undesirable results will occur?</p> <p>a. The fish will get sick.</p> <p>b. *The fish will die.</p> <p>c. The fish will grow rapidly.</p> <p>d. Healthful bacteria will begin to grow.</p>
<p>2. Of the seven basic items you need to start up a new fish tank, which of the following is not one of them?</p> <p>a. *Fish.</p> <p>b. Gravel.</p> <p>c. A filter.</p> <p>d. All of the above.</p>	<p>6. The main purpose of the air pump is to</p> <p>a. *pump air into the water.</p> <p>b. empty water from the tank.</p> <p>c. keep the fish moving at a fast pace.</p> <p>d. stir up the water so it will look cloudy.</p>
<p>3. The first step in setting up a new fish tank is to:</p> <p>a. buy a fish.</p> <p>b. buy the tank</p> <p>c. *put the tank where you want it.</p> <p>d. put in the water.</p>	<p>7. It would probably be a good idea to set up a new fish tank:</p> <p>a. near a window.</p> <p>b. on a small bookcase</p> <p>c. slowly, taking your time.</p> <p>d. close to an electrical outlet.</p>
<p>4. The main purpose of the dechlorinator is to</p> <p>a. kill algae in the water.</p> <p>b. encourages the growth of beneficial bacteria.</p> <p>c. it cleans the gravel.</p> <p>d. *make the water safe for the fish.</p>	<p><b>*Correct answer</b></p>

<sup>3</sup> Sample available on the CASL CD in Chapter 2 File "Assessments to Evaluate."

**True-False**

- 8. It is a good idea to not put a new fish tank too far away from natural light. True False
- 9. Natural light can stimulate the growth of algae, thus killing some fish. True False

**Fill-in**

- 10. You should set the temperature in your tank at \_\_\_\_\_.
- 11. After your fish tank has cured for \_\_\_\_\_ weeks, add \_\_\_\_\_ fish for every \_\_\_\_\_ gallons of \_\_\_\_\_.

**Matching**

12. Match items on the left with those on the right. Use each item on the right once or more than once.

- |                  |       |                                       |
|------------------|-------|---------------------------------------|
| a. Pump          | _____ | 1. Cleans the water.                  |
| b. Filter        | _____ | 2. Reduces pollution.                 |
| c. Algae         | _____ | 3. Adds air to water.                 |
| d. Heater        | _____ | 4. Dangerous to fish.                 |
| e. Bacteria      | _____ | 5. Turns water murky.                 |
| f. Filter        | _____ | 6. Harmful to fish.                   |
| h. Dechlorinator | _____ | 8. 90 degrees..                       |
| i. Pollution.    | _____ | 9. 80 degrees.                        |
| j. Light         | _____ | 10. Don't add too soon.               |
| k. Gravel        | _____ | 11. Helpful to fish.                  |
|                  | _____ | 12. Kills Fish.                       |
|                  | _____ | 13. Add last.                         |
|                  | _____ | 14. Add first                         |
|                  | _____ | 15. Causes algae.                     |
|                  | _____ | 16. Ready to go.                      |
|                  | _____ | 17. Helps show off fish attractively. |

**Essay**

Choose one of the following and write a one-paragraph answer (30 minutes, 20 points).

- a. It is important not to add new fish to your tank too soon. Explain why.
- b. Do you agree or disagree that setting up a new fish tank is a simple process. Explain your reasons.

## Assessment Sample: Culminating Project

**Intended Grade Levels:** Grades 8-9

### Description

The following assessment is given at the end of middle school social studies courses to document competence in the skills listed below. Students write a paper and give an oral presentation. A group of teachers rate the research paper. Presented below are the exit outcomes, description of the research project and a rubric that the raters use for the research paper. No information is provided on the scoring of the oral presentations.

### Exit Outcomes

<p><b>Skills and Habits of Mind</b></p> <ul style="list-style-type: none"> <li>Research</li> <li>Writing in a variety of modes</li> <li>Analytical reading</li> <li>Working cooperatively in a group setting</li> <li>Working independently</li> <li>Effective listening</li> <li>Ability to speak publicly</li> <li>Effective time management</li> <li>Organization of materials, readings, etc.</li> <li>Good study habits</li> <li>Effective questioning</li> <li>Group discussion</li> </ul>	<p><b>Content</b></p> <ul style="list-style-type: none"> <li>The L.E.A.R.N.S. analytical model (Law/government, Economics, Arts, Research, Religion, News/current events, Education, Science/Technology)</li> <li>Analytical thinking</li> <li>Cause and effect thinking</li> <li>Inferential thinking</li> <li>Deductive thinking</li> <li>Evaluative thinking</li> <li>The origins of western civilization</li> </ul>
<p><b>Attitudes/Dispositions</b></p> <ul style="list-style-type: none"> <li>Good citizen</li> <li>Respectful</li> <li>Open-minded</li> <li>Curious</li> <li>Reflective</li> <li>Perseverance</li> <li>Life-long learner</li> <li>Positive academic self-concept</li> </ul>	<p><b>Essential Questions</b></p> <ul style="list-style-type: none"> <li>How does change occur?</li> <li>What does "human rights" mean?</li> <li>Where do governments come from?</li> <li>Where do economic systems come from?</li> </ul>

**Description of the Research Project.** Students will pick a topic, write a research paper at least 10 pages long (and with 10 references), and give an oral presentation at least three minutes long.

**Criteria:** neatness, spelling, punctuation, grammar, capitalization, understanding.

### Rubric:

**Distinguished**—Writing shows creativity in theme and development. It is correct in all mechanics.

**Proficient**—Writing correctly uses information and supportive details. Few errors in mechanics are apparent.

**Apprentice**—Writing does not have a theme and/or few supportive details. Errors in mechanics are common.

**Novice**—Research report is begun but not concluded. Writing shows lack of understanding. Several errors in mechanics are found.

Source: CASL CD file: "Assessments to Evaluate"

## Assessment Sample: Emerson Essay Test\*

**Intended Grade Level:** Grades 10-12

### Description

This test is intended to assess **mastery of content knowledge** (knowledge of Emerson) and **reasoning skills**. The test consists of predicting Emerson's stand on various issues and citing evidence from various sources to support the prediction. This was practiced during class using statements different from those on the test. The author teaches and assesses Emerson in this fashion because he has found that students have trouble understanding Emerson and relating what he says to their own lives.

Students get one point for the right answer to each of the statements in the test and one point for their rationale. However, the author notes that even if the student doesn't provide the "right" answer as denoted in the scoring key, he will still give credit if the student's rationale for his or her answer is compelling. Results are used as 10% of the final grade in a literature class.

### The Test

"Read each of the statements below and put a check if Emerson would most likely complete the activity or put an X if he would disagree or not do the listed activity. For each answer, find a statement from Emerson's work to support your check or X. Be sure to quote the statement directly and give the page number in parentheses. Use the introduction to Emerson, *Nature*, and 'Self Reliance.' Emerson would:

1. \_\_\_\_\_ reject organized religion.
2. \_\_\_\_\_ look to the past for guidance.
3. \_\_\_\_\_ claim that religious truth comes from intuition.
4. \_\_\_\_\_ rely on others for his success and happiness.
5. \_\_\_\_\_ join a popular civic organization.
6. \_\_\_\_\_ take solitary walks in the woods
7. \_\_\_\_\_ dress in the most popular style of the day.
8. \_\_\_\_\_ speak boldly his opinions and thoughts.
9. \_\_\_\_\_ attend a seminar, "How to Get Ahead and Reach Financial Success."
10. \_\_\_\_\_ ask advisors what to do with his career."

\*Source: Brother Martin High School,, New Orleans, LA. Used with permission. Sample available on the CASL CD in Chapter 2 File "Assessments to Evaluate."