

What is a Rubric?

Rubric Development

This section presents workshop style sheets that can be used in professional development activities. The handouts define different rubrics and provide examples of rubrics. There are several performance tasks with rubrics to show how to align tasks with standards and assessments.

What is a Rubric?

A rubric is a set of scoring guidelines for judging student work of performance-based tasks.

The rubric answers the question:

What does proficiency (and varying degrees of proficiency) at a task look like?

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Thoughts on Rubrics

- A scaled set of criteria clearly defines for students and teachers what the range of acceptable/unacceptable performance looks like.
- The criteria provide descriptions of each level of performance in terms of what students are able to do and assigns labels (e.g., excellent, proficient, unacceptable) to these levels.
- Rubrics can be used to evaluate both process and content.
- Rubrics can be created by teachers, students and/or other interested parties.

IU8/Adapted from "Designing Rubrics for Authentic Assessment" by Homestead, McGinnis, and Pate
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Rubric Attributes

- Descriptors should use language that is maximally descriptive of each level of performance and its most defining characteristics.
- Criterion referenced
- The most important point on the scale to establish and define is the proficient level.
- The number of points on the scale should be large enough to be effective but small enough to be reliable and manageable.
- Descriptors of each point on the scale should represent a smooth continuum.

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Rubric Types

HOLISTIC: A holistic rubric contains multiple categories and descriptions within each category. The assessor views the work being assessed as a whole.

PURPOSE-Gives the "Big Picture"

ADVANTAGES-Amount of work evaluated; Efficient

DISADVANTAGES-Lacks specificity; best used for benchmark assessments or program assessments

ANALYTICAL: An analytical rubric looks at specific aspects of the work being assessed. The assessor judges the work by examining its elements.

PURPOSE-Provides specific feedback on level of performance of each element or component

ADVANTAGES-Analyzes each component; identifies needs and strengths

DISADVANTAGES-Time needed for use

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Holistic Rubric Scoring Example

[Looks at Big Picture]

(Adapted from article by Sabra Price and George Hein, "Scoring Active Assessments," Science and Children, 1994.)

TASK # 1: Measure the height of two seedlings and record results.

TASK # 2: Explain recorded measurements of growth pattern.

<u>Advanced</u>	<u>Proficient</u>	<u>Basic</u>	<u>Below Basic</u>
<p>ALL CRITERIA ARE MET AND THE WORK EXCEEDS THE ASSIGNED TASK. WORK CONTAINS ADDITIONAL UNEXPECTED OR OUTSTANDING FEATURES.</p> <ul style="list-style-type: none"> ● Measurements are accurate. ● Data is systematically recorded. ● More than reasonable explanations are provided. 	<p>RESULTS MEET THE CRITERIA.</p> <ul style="list-style-type: none"> ● Approximate measurements are recorded. ● Explanation for growth pattern is provided. 	<p>RESULTS MEET SOME OF THE CRITERIA.</p> <ul style="list-style-type: none"> ● Results are not recorded, but approximate measurements were used. ● Explanation relates to unit activities, but does not explain growth pattern. 	<p>DOES NOT COMPLETE THE TASK. SHOWS NO COMPREHENSION OF THE ACTIVITY.</p> <ul style="list-style-type: none"> ● Results are not recorded. ● Inaccurate measurement procedures were used. ● No explanation is given or one that makes no sense.

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Analytic Scoring: Provides precise diagnostic information.

Reasons for use:

- Provides concrete information about strengths and weaknesses.
- Utilizes information to address students' needs.

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Steps in Creating a Rubric

1. Design learning performance assessment:

- Focus on clear results.
- Determine the performance that demonstrates achievement of the standard (process or product).

2. Determine the criteria for the assessment:

- Identify criteria that relate to the process and the content.
- What are the levels of performance? What does "proficient" look like?
- Describe the proficient level by brainstorming all the elements.

3. Determine the essential categories in terms of performance behaviors, for example:

- Content
- Organization
- Design

4. Write descriptors for each of the categories in terms of performance behaviors:

- Start with what "proficient" looks like.

5. Write descriptors for scale levels in terms of performance behaviors, for example:

- Advanced
- Proficient
- Basic
- Below Basic

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A Rubric for Rubric Development

Is closely aligned to the performance task.

Attends to the following aspects:

- Content
- Process
- Performance itself
- Growth, change and/or quality improvement

Clearly defines clearly criteria and attributes for various qualities of work. For example:

- Outstanding
- Satisfactory
- Unsatisfactory

Uses format and descriptors which are:

- Clear.
- Focused.
- Precise.
- Developmentally appropriate.

Is accompanied by instruction which is:

- Related to the use of rubrics.
- Given early in related course or unit.

Adapted from work by Anne W. Kozik in [A Guide for Implementing the Chapter 5 Regulations into Home Economic/Life Management Programs in Pennsylvania](#)

Tips for Teachers in Developing Rubrics

1. Work with peers. It is always helpful to have someone react to and critique your assessments. It is especially helpful if they teach in the same area.
2. Start with a project or activity you have used before. When you start with something familiar you already have a pretty good idea of what you are looking for and what students' work will look like.
3. Examine sample rubrics. Look at well-written examples in your subject area if available. If someone else's statements are clear, you can adapt or modify some of the language.
4. Don't expect perfection. View each rubric as a draft that will be improved upon after you have used it with students.
5. Start writing each rubric with what represents proficient.
6. Don't try to assess everything in one task. Choose the three areas you are most concerned about for that performance task and assess them well. Focusing students' attention on a few criteria will result in higher quality work.

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Analytical Rubric Scoring Example

[Breaks Assessment Task Into Parts]

(Adapted from article by Sabra Price and George Hein, "Scoring Active Assessments," Science and Children, October, 1994.)

TASK # 1: Measure the height of two seedlings and record the results.

TASK # 2: Explain recorded measurements of growth pattern.

	<u>Advanced</u>	<u>Proficient</u>	<u>Basic</u>	<u>Below Basic</u>
ASK # 1: Measure the height of two seedlings and record results.	Measurements are accurate. Data is systematically recorded.	Approximate measurements are recorded.	Results are not recorded, but approximate measurements were used.	Results are not recorded. Inaccurate measurement procedures were used.
TASK # 2: Explain recorded measurements of growth pattern	More than reasonable explanations are provided.	Explanation for growth pattern is provided.	Explanation relates to unit activities, but does not explain growth patterns.	No explanation is given or one that makes no sense.

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ANALYTICAL SCORING SCALE FOR PROBLEM SOLVING

STUDENT _____ GROUP _____

SECTION _____ DATE _____

PROBLEM _____

ANALYTIC	SCORING SCALE	COMMENTS

<p>UNDERSTANDING THE PROBLEM</p>	<p>3: Complete understanding of the problem.</p> <p>2: Minor misunderstanding of the problem.</p> <p>1: Major misunderstanding of the problem.</p> <p>0: Complete misunderstanding of the problem.</p>	
<p>MAKING A PLAN</p>	<p>2: Plan is appropriate for problem.</p> <p>1: Partially correct plan or a plan that could have property.</p> <p>0: No attempt or totally inappropriate plan.</p>	
<p>SOLVING THE PROBLEM</p>	<p>3: Correct answer.</p> <p>2: Copying or computational error; partial answer.</p> <p>1: Incorrect answer based on inappropriate plan.</p> <p>0: No answer.</p>	
<p>LOOKING BACK ON THE PROBLEM</p>	<p>2: Checks and extends answer; able to generalize results.</p> <p>1: Checks and correctly labels answers.</p> <p>0: Does not check for reasonableness of answer.</p>	

RATING _____ /10 _____ %

Adapted from:

Charles, R., Lester, F., & O'Daffer, P. (1987). How to Evaluate Progress in Problem Solving. Reston, VA: NCTM.

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ASSESSMENT TASK FOR STUDENT LEARNING STANDARD

TITLE _____

GOAL AREA _____ WRITER _____

STANDARD: _____

INTENDED LEVEL: _____ REVIEWER: _____

E=Exemplary; M=Meets Standard; D= Does Not Meet Standard

1. There are a variety of solutions/correct answers.

Exemplary: Each student's response would be unique. There is an emphasis on divergent thinking and student creativity.

Meets standard: There is no one right answer. The correct responses, however, are limited and there would be a great deal of difference between student responses.

Does not meet standard: There is only one right answer and that is the one the teacher has in mind.

2. This type of task is likely to occur in the "real" world.

Exemplary: The students are working on a real problem or activity and the result of their efforts has a high likelihood of being used.

Meets standard: The task involves a simulation of an activity that is actually done for some practical purpose.

Does not meet standard: This is a "school" task, done only to meet the needs of assessment.

3. The task is intrinsically interesting and developmentally appropriate.

Exemplary: The students are working to solve interesting problems that appeal to students of this age. Given the opportunity, students pursue on their own.

Meets standard: The task involves an interesting activity that students enjoy.

Does not meet standard: The task is boring or too difficult for many students.

4. There is a rubric or checklist which defines acceptable performance and the criteria are sufficiently specific that various raters would achieve similar results.

Exemplary: The rubric has various levels with explicit enough descriptions so that students know precisely what is to be done.

Meets standard: The rubric has various levels with descriptions that define general expectations.

Does not meet standard: The rubric does not provide the student (or rater) with sufficient information to know what is expected.

5. The task is directly related to a student learning standard, transition standard or course standard and makes it possible to clearly differentiate between students who have achieved the standard and those who have not.

Exemplary: Completion of the task provides clear evidence that the learner has mastered the standard.

Meets standard: There is a clear relationship between the task and the standard. Assessment is done on the individual student's work.

Does not meet standard: It is not clear how this task relates to the standard and/or the successful completion; does not necessarily assure the individual student has mastered the standard.

6. Students have input in setting the standards and criteria.

Exemplary: Students have a high degree of involvement in determining all aspects of the assessment.

Meets standard: Students have a high degree of involvement in determining some aspects of the assessment task.

Does not meet standard: All elements of the assessment were determined by the teacher.

7. The task can be repeated or improved until satisfactorily accomplished.

Exemplary: The task is complex and significant learning takes place each time the student does it.

Meets standard: Continued practice with the task leads to an overall increase in skill level. The task is sufficiently complex to benefit the learner by repeating.

Does not meet standard: The task is sufficiently simple that not doing it right initially makes it obvious. Repeating the task is not likely to improve the student's general skill level.

8. The task includes self and/or peer assessment.

Exemplary: Self and/or peer assessment is integrated as a major element.

Meets standards: Includes some self or peer assessment.

Does not meet standard: Does not include self or peer assessment.

COMMENTS:

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PERFORMANCE ASSESSMENT CHARACTERISTICS

- They are criterion-referenced, meaning they provide a basis for evaluating a student's work with reference to criteria for proficient rather than with reference to other students' work.

- They require students to construct responses rather than select from a set of answers.
- They are in some cases aimed at assessing group performance rather than individual performance.
- In general, they focus on the process of problem solving rather than just on the end result.
- Carefully trained teachers or other qualified judges are involved in most of the evaluation and scoring.
- Students clearly understand the criteria by which they are judged.

Differences Between Traditional Testing and Authentic Assessment:

<u>Traditional Testing</u> (e.g., standardized, multiple choice)	<u>Authentic Assessment</u> (e.g., performance, portfolio)
Given annually, one shot	Ongoing, cumulative
Based on a single setting	Based on a variety of settings
One correct response	Open-ended, multiple possibilities
Norm-referenced	Student-centered, criterion-referenced
Test/teacher-driven	Student-driven
"Teacher proof"	Teacher-mediated
Paper/pencil	Performance
Narrow measure of skill	Real-world, integrated application that measures capacity for constructing and using knowledge
Separate from curriculum and instruction	Integral to curriculum and instruction
Comparisons to others	Comparisons to self and goals
Produces undesirable anxiety	Produces confidence in ability to self-assess and self-correct

Performance Assessment-Electricity (Grade 6)

Test questions to students: You are a scientist working for a large computer company. Your assignment is to investigate electrical conduction through a circuit.

1. Make an electrical circuit using all the items on the table (battery, wire, light bulb, switch).
2. Quickly draw a simple picture of your circuit in the space below.
3. Open "Bag A." Use the clip and lead to make an electrical tester. Test each of the items in "Bag A" with

your circuit. Place an X on the chart under the appropriate column to show what happened when each item was tested.

	"Bag A" Items	Conducts Electricity	Does Not Conduct Electricity
4. Did you build a complete circuit? Yes____ No____			
	Plastic Spoon		
5. Explain how you know.	Steel Washer		
	String		
	Penny		
	Nail		
	Rubber band		

6. How are the items that do conduct electricity alike?

7. How are the items that do not conduct electricity alike?

8. Examine the item in "Bag B." Do you think it will conduct electricity? Why or why not?

Draft Scoring Rubric

The following draft rubric was developed to assist in scoring student responses to the Grade 4 Performance Field Test in science.

4 = Gives complete and acceptable answers to all questions; provides acceptable rationale; includes a complete and accurate diagram of a circuit with supporting evidence; demonstrates understanding of the concept of circuits and conductivity; uses descriptive terms (conductor, flow, current, etc.).

3 = Gives fairly complete and acceptable answers to most questions; provides adequate answers, but rationale may be vague; includes a complete diagram of a circuit; shows understanding of the concept of electricity and conductivity; responds to questions #4 or #8 in an acceptable manner.

2 = Several incomplete or unsatisfactory answers; rationale is very limited; shows some understanding of the concept of circuitry, but not conductivity; diagram of a circuit may be missing or incomplete.

1 = Very little response (diagram only or few answers); partial answers to a small number of questions; no rationale; does not include a diagram of a circuit; contains at least one correct answer other than questions #3.

Source: California Assessment Program. (1990). Science Performance Field Test: Grade 6. Sacramento: CA