

# RUBRICS

Once you have identified a means of assessment, the next step is identifying a scoring procedure. The assessment methodology you choose will dictate how you will score student data. If you are using some type of objective assessment to measure student learning then the instrument should be scored dichotomously with an answer key to ensure standardization. Scores will be presented in the form of the number or percent correct.

Standardized assessments are usually scored by a testing company and results can be presented in the form of raw or scale scores to make interpretation easy. Results may be aggregated across subscales or for the test as a whole (i.e., composite score).

Performance assessments require the use of a standardized scoring procedure usually involving a rubric. A rubric is a matrix that identifies the expected outcomes of performance on task with the respective levels of performance along those outcomes. There are two type of scoring rubrics. Analytic scoring rubrics break scoring down into components. They provide descriptions and sub-scores for each characteristic of performance. For example, a writing assessment may be broken down into integration of ideas, mechanics, and clarity of expression. Holistic scoring rubrics on the other hand provide a single score for overall performance. Because of this analytic scoring rubrics provide more information and have more of a diagnostic value than holistic scoring rubrics.

## Parts of a Rubric

There are four components to a rubric: 1) a task description; 2) task dimensions; 3) a performance scale; and 4) cell descriptions. (See the figure on the following page.) The task description describes the assessment activity that serves as a reminder to the grader as to what the task is about. This can be created directly by cutting and pasting from a course syllabus or from the assessment task directions. The task dimensions lay out and describe the parts of the task and are listed in the first column of the table. They should be directly observable and in harmony with the program's learning outcomes. The performance scale indentifies the levels of performance along each of the dimensions and is presented in the first row of the table. Scales should include three to five points. Too many scales points makes it more difficult to differentiate between performance levels. Finally, cell descriptions operationalize what each level of performance means for each dimension. These may include check boxes beside each element of the performance description in the cell. They help convey why the student is given a particular score. The example below comes from Stevens & Levi, (2004).

**Task Description:** Each student will make a 5-minute presentation on the changes in one Virginia community over the past thirty years. The student may focus the presentation in any way he/she wishes, but there needs to be a thesis of some sort, not just chorological exposition. The presentation should include x, y, and z.

	Scale: Level 1	Scale: Level 2	Scale: Level 3
Dimension 1			
Dimension 2			
Dimension 3			
Dimension 4			

## Developing A Rubric

When developing a rubric, first complete the table by filling in the dimensions in the first column. After you have completed this step, fill in the scale points along the boxes in the first row. Huba and Freed (2000) have developed a list of scale points which is presented below for your assistance. It is helpful to frame scale points in a positive light in order to mitigate potential shock for low marks. Complete the cell descriptions next for each row and corresponding column. Start out by identifying the extreme levels of performance (i.e., the highest and lowest levels of performance). The lowest level of performance can be the negation of the exemplary category or a list of typical mistakes that students may make. It may be helpful to look at student work to identify these descriptions. Next fill in the middle categories.

Once you completed your rubric, share it with other faculty members in the program to get their feedback. Ask them to apply it to a sample of student work to determine if they understand the dimensions and performance

### Examples of Scale Points



*Lowest Level* *Highest Level*

Emerging	Progressing	Partial Mastery	Mastery
Not Yet Competent	Partly Competent	Competent	Sophisticated
Unacceptable	Marginal	Proficient	Exemplary
Novice	Intermediate	Intermediate High	Advanced
Beginning	Developing	Average	Accomplished

*(Huba & Freed, 2000)*

## Scoring Using A Rubric

Because rating performance involves human judgment, it is subject to error. Personal biases, carry-over effects of judgments due to preceding tasks, and inconsistency in scoring due to lack of standardization of scoring criteria intrude and limit the value of the ratings. To avoid these common errors, 1) rate the performance of all students on one task before going to the next to keep scoring criteria in mind; 2) whenever possible rate performance without knowledge of student's name to avoid halo effects; 3) use multiple raters for high-stakes decisions; and 4) train your raters to calibrate their scoring by bringing them together to review their responses in order to identify patterns of inconsistent responses.

## Sample Rubric: UR General Education Field of Study for the Natural Sciences

**Task Description:** Each student will develop a lab report for the particular experiment in question. This report should include an abstract, introduction, instrumentation and procedure, discussion, error analysis, and conclusion sections. Students must show an understanding of the topic and support all generalizations with details.

<b>LEARNING OUTCOMES</b>	<b>Exemplary</b>	<b>Proficient</b>	<b>Marginal</b>	<b>Unacceptable</b>
<b>Students will demonstrate in-depth knowledge and understanding of content material within the course discipline.</b>	Clear indication of higher order thinking demonstrating mastery of the material.	Some indication of higher order thinking demonstrating mastery of the material.	Some placement of ideas in appropriate disciplinary context. Limited evidence of higher order thinking.	Limited or no evidence of higher order thinking with confused demonstration of understanding of the material.
<b>Students will demonstrate ability to formulate and test good scientific hypotheses.</b>	Formulates elegant and easy to test hypotheses with no confounding variables. Applies appropriate methodologies.	Formulates hypotheses that are testable but lack some clarity or contain some confounding variables. Usually applies appropriate methodologies.	Formulates non-testable hypotheses but contain elements indicative of some understanding of the importance of elegance/clarity in hypothesis creation. Designs weak experiments.	Formulates non-testable hypotheses and provides no indication of an understanding of the importance of elegance/clarity in hypothesis formation. Consistently designs poor experiments.
<b>Students will analyze and interpret data using discipline-specific tools.</b>	Consistently identifies and correctly applies appropriate quantitative/qualitative methodologies.	Typically identifies and usually applies appropriate quantitative/qualitative methodologies.	Inconsistently identifies and irregularly applies appropriate quantitative/qualitative methodologies.	Fails to identify or apply appropriate quantitative/qualitative methodologies.
<b>Students will interpret knowledge in meaningful and appropriate ways as they draw conclusions about the significance of scientific data.</b>	Draws logical conclusions that follow from data in a manner indicating clear understanding of significance.	Conclusions are generally solid, but may lack some clarity or consistency with data.	Extrapolates beyond the data creating nonviable interpretations of data at hand.	Draws incorrect conclusions and misunderstandings the significance of data/findings.