

Activity Review: Scoring Rubric

Thank you for participating in the review of teaching activities in the On the Cutting Edge collections. For each of the major review criteria (Scientific Accuracy; Alignment of Goals, Activity, and Assessment; Pedagogic Effectiveness; Robustness; and the Activity Description) we have asked a series of questions that should inform your overall rating in each of these categories. This scoring rubric is intended to help calibrate reviews from across the initiative. Your numerical scores and written recommendations will be used to provide guidance to inform editorial decisions and to advise authors about revisions needed to attain “Exemplary” status in our reviewed collections.

1. In each of the 5 review areas, please use these “guiding questions” to assign an Overall Score, rating the activity as Exemplary, Very Good, Adequate or Problematic according to the following scoring rubric.

Scientific Accuracy

*Context: Does this activity cover a topic that is **important** to learning essential concepts, content or skills related to the geosciences; is the underlying scientific content accurate, sufficiently developed to enhance learning, and unlikely to lead to misinterpretations?*

- Exemplary—Excellent coverage of important scientific topic(s) that will lead to enhanced student learning; this teaching activity includes scientific concepts, content or skills in a comprehensive manner, is well-referenced, avoids inaccuracies or misleading information, and is in accord with contemporary scientific understanding of this topic.
- Very Good—this teaching activity covers scientific concepts, content or skills with sufficient detail to impart understanding, but some background information is missing that could more completely develop the scientific content and place it in contexts that are necessary for understanding.
- Adequate—this teaching activity introduces scientific concepts and content in a rudimentary way, with only a minimal coverage of the underlying scientific principles/methods; lack of detail may introduce inaccuracies or misinterpretations.
- Problematic—the underlying scientific principles presented in this teaching activity are not in accord with contemporary scientific understanding of this topic.

Alignment of Goals, Activity, and Assessment

Context: Are the learning goals, teaching activities, and assessments well-aligned such that they will a) enhance learning and b) provide evidence that learning has been achieved? (Note: learning goals may include content or concept mastery, skill development, affective aspects, or metacognition).

- Exemplary—learning goals are clearly stated, the activity itself has been developed to specifically address these goals, and learning outcomes assessments will reveal if the learning goals have been achieved.

- Very Good—teaching activities will likely lead to identified learning goals will likely lead to identified learning outcomes and assessments are identified, but could be further developed to more completely demonstrate learning outcomes by students.
- Adequate—Unclear if learning goals will be achieved; rudimentary mention of learning goals, assessments and learning outcomes are presented but few details are presented that would allow demonstration that student learning has been achieved.
- Problematic—learning goals and assessments are either absent or not aligned in ways that will enable learning.

Pedagogic Effectiveness

Context: This activity uses instructional practices appropriate for the subject matter that will enable learning.

- Exemplary— A strong exercise that will promote student learning; is engaging and motivating for students; builds on prior abilities and knowledge; promotes higher order thinking skills; encourages reflections on student learning.
- Very Good—Students will likely be engaged; most components of good activity design are present (e.g., active learning, extends student abilities beyond rote memorization or ability to follow directions, reflections on learning).
- Adequate—May lead to some aspects of student learning; some elements of good activity design are present but does not constitute a comprehensive learning experience, e.g. this activity requires basic application of knowledge or skills, without challenging students to go beyond the instructions; does not require independent thought to reflect on connections with other course content or prior knowledge.
- Problematic—rote application only; no evidence of requiring independent thought, or awareness of how the exercise fits into the larger curriculum.

Robustness

Context: Ease of use; does this activity include all components needed to successfully complete the exercise; all components are stable and they work?

- Exemplary—All activity components are present, all work well, and are in a stable form (e.g. activity assignment, data, images, software, URLs, ...). Users will have confidence that they can directly use this in their class, can be used "as is".
- Very Good—The activity works very well, with only minor glitches but users can figure it out with little effort; the required components of this exercise are available and can be used with little or no modification;
- Adequate—the activity works to some degree, but users have to expend energy to make all the components work. The components of this exercise are available but may need to be modified or updated to successfully complete the exercise.
- Problematic—Doesn't work, components work so poorly, are missing or not accessible that they impede use, preventing successful completion of the activity.

Activity Description

Context: The ActivitySheet includes sufficient information to allow an instructor/student to make an informed decision about whether or not this is an appropriate activity to use in their learning situation.

- Exemplary—the ActivitySheet provides all information needed for instructors to select this exercise for use in a class; and, provides guidance about how to optimally use this exercise; empowers instructors to effectively use this activity to enhance student learning. Information is provided to help instructors adopt or adapt to their own situation, including teaching tips.
- Very Good—most of the information is present in the ActivitySheet, but some of the fields could be further developed as noted in the text box below.
- Adequate—basic information about this activity is provided, but more detail is required to help an instructor know what the activity entails and how to best use this in their class.
- Problematic—Not useful critical information is missing.

Summary: Revisions needed to Qualify as “Exemplary”

- Based on the review scores recorded above, please provide some specific advice to authors and editors about changes that would be needed to qualify for the “Exemplary” teaching collection. For reference, we anticipate that 10-20% of the resources in our teaching collections will be recognized as “Exemplary”. Resources in this top level collection a) must have scored Exemplary or Very Good in all categories, and must also rate as “Exemplary” in at least three of the five review categories. Your constructive advice will be greatly appreciated as we continue to work towards the best possible collection of resources to support teaching and learning.