

Seminars on Science

Earth: Inside and Out Assessment

ASSESSMENT COMPONENT: ASSIGNMENTS

Course Assignments introduce processes, tools and technologies that scientists use to ask and answer questions. Assignments engage learners in scientific practices and expose them to scientific processes.

Overall Objective: To build content knowledge.

Earth: Inside and Out – Week 2

Local Geology: Part 1

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To select a geologic feature	Selected a geologic feature that could be objectively observed.	Selected a geologic feature that could be observed.	Selected a geologic feature that made detailed study difficult.	Did not select a feature. OR Selected a feature that could not be observed.
To observe and describe a geologic feature	Described and analyzed the structure and texture of the feature including both site-wide and specific details.	Described the feature including a simplified analysis of structure, texture, and details.	Described the feature with minimal or no details.	Did not describe the feature.
To use Google Maps	Included a placemaker with a description and photos.	Included a placemaker with a description and few or no photos.	Included a placemaker with minimal description or photos.	Did not include a placemaker. OR Did not include a description with the placemaker.
To enhance observations with digital photos	Photos taken clearly compliment the observations.	Photos taken relate to the observations.	Photos taken offer little to the observations. OR Photos not taken by the learner.	Did not include photos.
To communicate scientific ideas	Communicated ideas effectively using appropriate course-related language.	Generally communicated ideas using appropriate course-related language.	Generally communicated ideas but did not use course-related language. OR Writing contained significant errors.	Did not communicate scientific ideas.

Earth: Inside and Out – Week 3
Local Geology: Part 2

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To make inferences based on observations and research	Demonstrated use of research from geologic map, course and/or outside resources to make logical inferences about rock-type, history of formation and age of the feature. Included information on associated rock formations.	Demonstrated use of research to make inferences about the geology of site.	Demonstrated minimal use of research to make inferences. Inferences were flawed or limited.	Did not make inferences.
To communicate scientific ideas	Communicated ideas effectively using appropriate course-related language.	Generally communicated ideas using appropriate course-related language.	Generally communicated ideas but did not use course-related language. OR Writing contained significant errors.	Did not communicate scientific ideas.
To cite reference sources	Cited all reference sources in an organized manner.	Cited reference sources in an organized manner with minor errors.	Some reference sources omitted or poorly organized.	Did not cite reference sources.

Earth: Inside and Out – Week 4
Past Climate Records

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To choose an appropriate climate record	Chose climate record from either course or outside resources that allowed changes in climate to be tracked over a time period substantial enough for in-depth observation.	Chose climate record that allowed climate changes to be tracked over time with reasonable accuracy.	Chose climate record that did not allow for in-depth study.	Did not choose climate record.
To describe how a climate record provides insight into the workings of the climate system	Described how climate record data can be used to provide insight into the climate system in a way that demonstrated mastery of the content.	Described how climate record data can be used to provide insight into the climate system in a way that demonstrated understanding of the content.	Described how climate record data can be used to provide insight into the climate system in a way that did not demonstrate understanding or may have been inaccurate.	Did not describe how climate record provides insights.
To identify new questions based on the climate record	Identified several questions based on climate record data in a way that demonstrated mastery of the content.	Identified questions based on climate record data in a way that demonstrated understanding of the content.	Identified questions that did not demonstrate understanding.	Did not identify questions.
To identify the limitations of the climate record	Limitations of the climate record were clearly identified and described.	Limitations of the climate record were identified.	Identified limitations that did not demonstrate understanding.	Limitations were not identified.
To communicate scientific ideas	Communicated ideas effectively using appropriate course-related language.	Generally communicated ideas using appropriate course-related language.	Generally communicated ideas but did not use course-related language. OR Writing contained significant errors.	Did not communicate scientific ideas.
To cite reference sources	Cited all reference sources in an organized manner.	Cited reference sources in an organized manner with minor errors.	Some reference sources omitted or poorly organized.	Did not cite reference sources.

**Earth: Inside and Out – Week 5
Bunge and Mantle Convection**

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To create a chart or graphical representation	Created a well-organized, comprehensive chart or graphical representation of the two models of mantle convection.	Created an organized chart or graphical representation of the two models of mantle convection.	Created a chart or graphical representation of the two models of mantle convection that contained errors, was missing information, or lacked organization.	Did not create a chart or graphical representation.
To compare and contrast the convection models	Compared and contrasted convection models using detailed descriptions that included information on plate shapes, sizes, and velocities for both models.	Compared and contrasted convection models using descriptions that included some information on plate shapes, sizes, and velocities for both models.	Compared and contrasted convection models but did not give detailed descriptions of the differences between the two models.	Did not compare and contrast models.
To identify the model that best explains mantle convection and explain why it supports observations of plate tectonics	Identified the model that best explains mantle convection and clearly explained why it supports observations of plate tectonics in a way that demonstrated mastery of the content.	Identified the model that best explains mantle convection and explained why it supports observations of plate tectonics in a way that demonstrated understanding of the content.	Identified a model but did not include an explanation that demonstrated understanding. OR Identified and explained both models.	Did not identify and explain the model.
To communicate scientific ideas	Communicated ideas effectively using appropriate course-related language.	Generally communicated ideas using appropriate course-related language.	Generally communicated ideas but did not use course-related language. OR Writing contained significant errors.	Did not communicate scientific ideas.
To cite reference sources	Cited all reference sources in an organized manner.	Cited reference sources in an organized manner with minor errors.	Some reference sources omitted or poorly organized.	Did not cite reference sources.

OVERALL ASSESSMENT: ASSIGNMENTS (COURSE WEIGHT: 30%)

ASSESSMENT COMPONENT: DISCUSSIONS

A large part of learning in our online courses occurs through discussion (text-based, asynchronous message exchanges). You are expected to be in frequent contact with your instructional team and other learners in the course's Discussion areas.

While this can be different from face-to-face communication, the same characteristics make classroom and online discussions meaningful. Both consist of two-way exchanges between teachers and learners: a back-and-forth that engages and deepens the understanding of all participants.

Each Discussion is graded two weeks after it begins. Weekly grades are based on how well learners reflect on content, engage in discussion with faculty and other students, and extend the online conversation (see the first two rows in the rubric). These grades will appear in the gradebook and will be combined with grades for the completion of Discussion assignments (see the third row in the rubric) to determine an Overall Assessment for Discussions.

Overall Objective: To construct content knowledge and community.

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To support reflections on content (Discussion Grade Weight: 45%)	Reflected on the Discussion question using course materials while drawing on other resources and asking additional questions.	Reflected on the Discussion question using course materials.	Did not adequately reflect on the discussion question or did not relate post to course materials.	Did not post, or posted without addressing the Discussion question.
To engage in the online learning community and extend the online conversation (Discussion Grade Weight: 35%)	Posted many substantive and timely responses to other learners and course faculty.	Often responded in a substantive and timely manner to other learners and course faculty.	Occasionally responded substantively to other learners and course faculty, or failed to post in a timely manner.	Posted few or no substantive responses.
To complete the Discussions (Discussion Grade Weight: 20%)	Completed all of the Discussions.	Completed almost all of the Discussions.	Completed more than half of the Discussions.	Completed few or no Discussions.

OVERALL ASSESSMENT: DISCUSSIONS (COURSE WEIGHT: 40%)

ASSESSMENT COMPONENT: FINAL PROJECT

You have two options for the *Final Project*.

- *Application in the Classroom*: an instructional unit based on a course topic that you might be interested in using in your own classroom or environment. How could you use questions related to this course to support research and inquiry exploration in an educational setting?
- *Application in the Field*: a research proposal that relates to a course topic you find particularly interesting. What question would you pursue if you could? How would you plan to answer that question?

Overall Objective: To build and demonstrate understanding of course content.

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
To demonstrate content knowledge	Project demonstrated mastery of course content by applying appropriate scientific concepts.	Project demonstrated understanding of course content by applying appropriate scientific concepts.	Project demonstrated a limited understanding of course content by applying appropriate scientific concepts.	Project failed to demonstrate an understanding of course content.
To support scientific inquiry	Project clearly supported scientific inquiry, either by raising and investigating important questions in a manner consistent with the way scientists study the natural world, or through the clear design of classroom materials that provide students with opportunities to ask important questions and to gather, organize, analyze, and evaluate relevant information.	Project supported scientific inquiry, either by raising and investigating questions or by designing classroom materials that may provide students with opportunities to ask important questions and to gather, organize, analyze, and evaluate relevant information.	Project sought to support scientific inquiry, either by raising important questions or by designing classroom materials that might enable student research projects or practice to emerge.	Project did not support scientific inquiry.
To integrate and organize content	Incorporated all of the required elements, as well as a clearly articulated introduction and conclusion in an organized sequence that demonstrates the goals of the project.	Incorporated all of the required elements, as well as a clearly articulated introduction and conclusion in an organized sequence that demonstrated the goals of the project. Some elements lacked depth and/or clarity.	Incorporated most but not all of the required elements, or lacked an organized sequence that demonstrated the goals of the project.	Did not incorporate the required elements.
To use resources (essays, books, videos, websites, etc.)	Critically analyzed all resources. Incorporated personal ideas, course based materials, and additional resources.	Incorporated personal ideas, course based materials, and additional resources.	Drew upon some course-related resources.	Did not use resources effectively in the project.
To organize time schedules	Completed all of the milestones and the final project by the date each was due.	Completed one milestone by the due date; submitted one after the due date. Completed the final course project by the due date.	Both milestones completed, but one or both submitted after the due date. Completed the final project after the due date. OR Did not complete the milestones. Completed the final project by the due date.	Did not complete the project milestones. Completed the final project after the due date.

WEEK 3 FINAL PROJECT SUBMISSION (COMPLETE OR INCOMPLETE)

WEEK 5 FINAL PROJECT SUBMISSION (COMPLETE OR INCOMPLETE)

OVERALL ASSESSMENT: FINAL PROJECT (COURSE WEIGHT: 30%)