

## Seminars on Science

### The Diversity of Fishes 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.**

#### The Diversity of Fishes – Week 1

##### Fish Market Observation

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
<b>To make initial observations of a fish at a fish market</b>	Made detailed initial observations of a fish at a fish market. Described differences between fish such as color, size, and markings.	Made initial observations of a fish at a fish market. Described differences between fish.	Observations lacked detail, were incomplete, or inaccurate.	Did not make observations.
<b>To make physical observations of a fish</b>	Made detailed physical observations of a fish including its' body shape, eyes, mouth, fins, and pigmentation.	Made physical observations of a fish including specific characteristics.	Observations lacked detail, were incomplete, or inaccurate.	Did not make observations.
<b>To take measurements of a fish</b>	Took several measurements of a fish including total length, standard length, and length of caudal peduncle, head, and snout.	Took measurements of a fish including specific measurements.	Measurements lacked detail, were incomplete, or inaccurate.	Did not take measurements.
<b>To compare observations to Fishbase</b>	Compared observations to Fishbase in detail and determined scientific and common name for fish.	Compared observations to Fishbase and identified fish.	Comparison lacked detail, was incomplete, or inaccurate.  OR  Compared observations to Fishbase but did not identify fish.	Did not compare observations.
<b>To communicate scientific ideas</b>	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.
<b>To cite reference sources</b>	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.

**The Diversity of Fishes - Week 2**  
**Fish Description, Part 1**

<b>Objective</b>	<b>Exceeds course expectations</b>	<b>Meets course expectations</b>	<b>Approaches course expectations</b>	<b>Does not meet course expectations</b>
<b>To make physical observations of an assigned bony fish</b>	Made detailed physical observations of a bony fish including its' body shape, eyes, mouth, fins, and pigmentation.	Made physical observations of a bony fish including specific characteristics.	Observations of a bony fish lacked detail, were incomplete, or inaccurate.	Did not make observations.
<b>To communicate scientific ideas</b>	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.
<b>To cite reference sources</b>	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.

**The Diversity of Fishes - Week 3**  
**Fish Description, Part 2**

<b>Objective</b>	<b>Exceeds course expectations</b>	<b>Meets course expectations</b>	<b>Approaches course expectations</b>	<b>Does not meet course expectations</b>
<b>To compare the anatomy of two fishes</b>	Compared the anatomy of two fishes using detailed descriptions.	Compared the anatomy of two fishes.	Comparison of fishes lacked detail, was incomplete, or inaccurate.	Did not compare two fishes.
<b>To revise the description of the fish from Week 2</b>	Made detailed revisions to week 2 fish description that greatly enhanced the original description.	Made revisions to week 2 fish description that enhanced the original description.	Revisions to week 2 fish description lacked detail, were incomplete, or inaccurate.	Did not revise description.
<b>To construct a table that shows the differences between two fishes</b>	Constructed a well-organized, comprehensive table that showed the differences between two fishes.	Constructed an organized table that showed the differences between two fishes.	Constructed a table that showed the differences but lacked detail, was incomplete, or inaccurate.	Did not create a table.
<b>To communicate scientific ideas</b>	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.

**The Diversity of Fishes - Week 4**  
**Constructing a Dichotomous Key, Part 1**

<b>Objective</b>	<b>Exceeds course expectations</b>	<b>Meets course expectations</b>	<b>Approaches course expectations</b>	<b>Does not meet course expectations</b>
<b>To create a table to organize and catalog characteristics of fishes</b>	Constructed a well-organized, comprehensive table that cataloged several distinguishing characteristics of fishes.	Constructed an organized table that cataloged characteristics of fishes.	Constructed a table that cataloged characteristics of fishes but lacked detail, was incomplete, or inaccurate.	Did not create a table.
<b>To communicate scientific ideas</b>	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.
<b>To cite reference sources</b>	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.

The Diversity of Fishes - Week 5  
 Constructing a Dichotomous Key, Part 2

Objective	Exceeds course expectations	Meets course expectations	Approaches course expectations	Does not meet course expectations
<b>To create a dichotomous key for four fishes</b>	Created an organized dichotomous key for four fishes that included specific details.	Created a dichotomous key for four fishes.	Created a dichotomous key that lacked detail, was incomplete, or inaccurate.	Did not create a dichotomous key.
<b>To communicate scientific ideas</b>	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.

OVERALL ASSESSMENT: ASSIGNMENTS (COURSE WEIGHT: 30%)

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**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.**

<b>Objective</b>	<b>Exceeds course expectations</b>	<b>Meets course expectations</b>	<b>Approaches course expectations</b>	<b>Does not meet course expectations</b>
<b>To support reflections on content</b> (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.
<b>To engage in the online learning community and extend the online conversation</b> (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.
<b>To complete the Discussions</b> (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.

<b>OVERALL ASSESSMENT: DISCUSSIONS (COURSE WEIGHT: 40%)</b>
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**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.**

<b>Objective</b>	<b>Exceeds course expectations</b>	<b>Meets course expectations</b>	<b>Approaches course expectations</b>	<b>Does not meet course expectations</b>
<b>To demonstrate content knowledge</b>	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.
<b>To support scientific inquiry</b>	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.
<b>To integrate and organize content</b>	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.
<b>To use resources (essays, books, videos, websites, etc.)</b>	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.
<b>To organize time schedules</b>	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%)**