

# VISIT Rubric For Evaluating Lessons

## *Who uses this rubric?*

- The following is a rubric for you to use when you are writing your evaluation of a lesson that might be used by teachers for their own professional development in VISIT, or that might be used by VISIT teachers in their classrooms with their students.

## *What is a “lesson”?*

- A lesson typically will be something you can do in one to three hours’ work at the computer (or with your students in one or two class periods). If there are several lessons within a larger Investigation or curriculum, please fill out this form for each lesson you review.
- These lessons might be ones that the VISIT project is developing,
- These lessons may be ones that are already offered in VISIT webct courses,
- The lessons may have been developed elsewhere (e.g. Northwestern LATE Environment curriculum; MFTeach; ESRI lessons).

## *Who will read the evaluation you are writing?*

- Other teachers in VISIT. Teachers will use your evaluations to learn how another teacher thinks about the lesson. Teachers might decide whether to take a certain lesson based on your critique.
- The authors of the lessons you are reviewing. Authors of lessons will use your evaluation to revise and improve the lesson.
- VISIT staff will use your evaluation to help decide whether to include the lesson in the VISIT professional development program for teachers.

I hope you will enjoy reviewing and evaluating lessons through using this rubric. Please suggest improvements to this rubric to [bev@piedmontresearch.org](mailto:bev@piedmontresearch.org).

## **Instructions:**

- Please use this form to describe and evaluate an individual lesson. A lesson typically will be something you can do in one to three hours’ work at the computer (or with your students in one, two or three class periods). If there are several lessons within a larger Investigation or curriculum, please fill out this form for each lesson you review.
- Use the drop down menu in column 2 to rate each criterion. This should be on a continuum from 0 (Strongly Disagree) to 10 (Strongly Agree)

Strongly Disagree			Neutral				Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10

- Use the right-most column of the table to explain your rating for each item. Just click in the box and begin typing your comments.
- Add any additional comments or items that you think should be included in the rubric at the end of this document.
- Please save this file under a new name when you fill it in. Include your last name in the file name. E.g. “hunterLATElsn2.doc”
- Unless you have received other instructions, please attach your completed evaluation document to an email and send it to both [bev@piedmontresearch.org](mailto:bev@piedmontresearch.org) and to [anneeschtruth@netscape.net](mailto:anneeschtruth@netscape.net).

You may want to suggest additional reviewers for this lesson. Include that information in your email.

1. Reviewer Name:	Fred Hohn	
2. Date Reviewed:	June 2001	
3. Please identify the resource you are evaluating (name of overall package or project, specific lesson title, author, source, how obtained, URL, etc).	Looking at the Environment (LATE) Unit 1 Lesson 5 Distribution of Plants and Animals at the Surface of the Earth	
4. Did you try out this lesson with students? If yes, please tell something here about the class and students with whom you tried this.	I did this lesson with 5 students in my ecology class. Ecology is an upper level elective (grades 11-12) and is heterogeneously grouped. These students were the remnants of the class after the seniors had graduated.	
Quality of Lessons		
➤ Pedagogically sound and appropriate to inquiry processes	8	<b>The general concept of the lab is good, but I'm not sure that it achieves all of the goals that it should.</b>
➤ Provides scientific value and accuracy	10 Strongly Agree	<b>I do not have any issues.</b>
➤ Appropriate grammar, spelling, quality of language used	9	<b>-part A, step 2 should read curriculum resources not project resources -part A, step 19, data is given in mm not meters part B, steps 6 and 9, should read movie not move</b>
➤ Instructions are understandable	7	<b>-In part A, the lab refers to temperature ranges in Celsius, but the data is in Kelvin. These conversions need to be made or students should just use the sample data layer. -part A, step 12, clarify what the major climate zones are for use in the chart -part B, provide a better explanation of what an NDVI is -part C, step 12, make sure that the appropriate link is indicated - part C, step 13, there is no figure below as indicated</b>

<p>➤ High quality of visual representations (e.g. layout sensible; screen shots readable; appropriate graph)</p>	<p>9</p>	<p><b>Visualizations are good, but it would be better if you could see them on the full screen. My class felt that the movies were particularly useful and that they really helped visualize a concept after viewing them 2-4 times.</b></p>
<p>➤ Appropriate to curriculum, age level</p>	<p>6</p>	<p><b>The major biomes and the relationships drawn in this lab are commonly discussed in introductory biology and environmental science classes.</b></p>
<p>➤ Technical soundness (i.e., the technology works as intended).</p>	<p>10 Strongly Agree</p>	<p><b>no issues with the software</b></p>

The <b>Investigation or lesson(s)</b> is effective for a <b>teacher's</b> professional development.		
➤ Uses and expands her/his scientific knowledge	7	I liked the general concept of the activity to draw relationships between climate factors and make predictions about diversity. However, I'm not sure that all of my students accomplished this goal
➤ Expands his/her use of technology professionally and in the classroom	7	I would use this lesson (or at least parts of it).
➤ Expands his/her understanding and skills in spatial reasoning	1 Strongly Disagree	The movie clips are very useful visualizations.
➤ Encourages collaboration with other teachers, scientists and technologists	7	Other teachers that have passed by while my class was working expressed interest in what we were doing.
➤ Identifies new ways for meeting standards	6	The lesson does provide a new approach, but the objectives of the lessons are not well aligned with MCAS standards. However, many biology courses and environmental courses cover these topics anyway.
➤ Provides guided science inquiry lesson plans	7	There is some development of the inquiry process in this lesson.
➤ Appropriate for teacher use (convenience, efficient use of time, technically accessible, etc)	7	The lesson would need to be reworked a little, but I think that I could incorporate it into my class.

The <b>Investigation or lesson(s)</b> is effective at the level of the <b>students</b> who use or might use the developed lesson		
➤ Learning meets standards Identify standards: Biology Environmental Science	4	The objectives addressed in this lesson are not specifically addressed by the state standards (MCAS). However, they are frequently taught in biology courses and are important. They are also usually covered in environmental science courses.
➤ Participates in and learns about scientific inquiry processes	6	to some degree, but not extensively
➤ Develops or applies spatial reasoning in analysis of data	8	Students do address spatial and temporal relationships. The visualizations are helpful in achieving this goal.
➤ Learns about science applications relevant to community issues	5	No direct links are drawn, but the lesson could be used to introduce biodiversity issues.
➤ Becomes familiar with appropriate technology applications	7	If students use this software throughout the year, then this would help. Most students felt comfortable with the software after completing two lessons.

**The Investigation Themes.** Describe the **theme** or topic on which the investigation will be developed.

(Example of **themes**: water quality in rivers or lakes; hazardous materials in living environments; ozone or radon in urban areas; distribution of flora or fauna; ecological modeling)

Theme:

climate factors, biomes, and diversity

➤ Is environmentally-related or socially important.	7	The biodiversity issues certainly are, but this aspect of the lesson needs to be further developed.
➤ Uses empirical databases.	7	Additional information on where the data came from would be helpful.
➤ Uses technology for visualization, manipulation of data; preparation of products; communication	9	Linking data layers and examining relationships was emphasized in the lesson.
➤ Inquiry-driven.	7	The lesson could be made more inquiry based, but did involve more student inquiry than the other lesson that I reviewed.
➤ Interesting to the teacher who develops and implements the lessons.	8	After the kinks were worked out, I found the lesson to be interesting and informative.
➤ Interesting to the student who uses the lessons and becomes actively involved.	7	Students had a more favorable opinion of this lesson, but still felt that the same learning goals could be achieved more efficiently.
➤ Interesting and relevant to the local community	5	Again, the biodiversity issues are, but this was not adequately emphasized in the activity.

**The Investigation Scenario.** The investigation **scenario** is the particular real world environment under study. It defines the geographical footprint for the **Investigation**. Local **scenarios** are usually more desirable because they are more relevant to the teachers, students and people in the surrounding community.

Example of **scenarios**:

water quality in the local watershed; power shortage across a state; a city wide environmental problem; water resources across a state or region – location, adequacy, preservation

Scenario:

climate factors, biomes, and diversity on the surface of the Earth

➤ Illustrates the relevance of science for the teacher, the students and the community	5	only to a limited extent
➤ Provides a context where the grade appropriate science standard can be met	7	Although these concepts are not specifically addressed in the MCAS frameworks, I think that the lesson could fit nicely into a biology or environmental science curriculum.
➤ Provides a framework where a guided science inquiry can be presented, discussed and developed	8	This lesson could lead to further discussions of biodiversity, but does not adequately emphasize these ideas.

<b>Types Of Data And Availability</b>		
➤ Defines the data for an investigation.	8	yes, but included additional data on diversity
➤ Provides the data	10 Strongly Agree	all data provided
➤ Teaches how to get the data.	1 Strongly Disagree	not mentioned
➤ Supports and teaches Geo-spatial Data Sets	9	The lesson helps students see spatial and temporal relationships.
<p>Identify the types of data provided:</p> <p>temperature</p> <p>runoff</p> <p>surface cover</p>		

<b>The Scientific and Technological Knowledge</b>		
➤ Identifies the specific scientific knowledge base needed.	7	Include more information on climate zones or the biomes that will be discussed.
➤ Identifies resource scientists and specialists.	1 Strongly Disagree	no information given
➤ Correlates the knowledge base with curricular standards.	5	not specifically
➤ Provides links to needed resources and a URL is provided for a glossary	1 Strongly Disagree	no links provided
➤ The lesson or investigation resources help to formulate, understand, and/or use a Driving Question for inquiry.	8	Yes, but this needs to be emphasized in the wrap up section.
➤ It is clear what the driving question(s) are.	8	I think the question is clear, but I'm not sure that all students had adequately answered it by the end of the lesson.
<p>Driving Question:</p> <p>How are climate factors related to diversity and the distribution of plants and animals over the surface of the Earth?</p>		

Data Integration, Analysis and Interpretation		
➤ Defining Data Processing: The data are given, already processed, or procedure is given.	9	Data is provided. Part A needs a little reworking or just have students complete it using the sample dataset
➤ The analysis methods are appropriate to the purpose of the investigation and worth learning and doing	8	.Most are, but some clarifications are necessary in part A.
➤ Suggested tools are highly appropriate and useful for the analysis and interpretation tasks	8	Linking datasets provides a quick and useful way to visualize relationships.
Please identify tools used: World Watcher - synchronized mouse, select by value, histogram		
Tools for analysis: Teachers are provided with instruction in their use.	1 Strongly Disagree	no instruction provided
Tools for analysis are accessible to teacher	8	all necessary tools are provided
Tools for analysis are accessible to the students	10 Strongly Agree	all necessary tools are provided
Expected analysis outcomes are defined clearly and completely.	6	Relationships between climate factors and biodiversity should be made clear by the end of the lesson.

<b>Lesson Plans and Rubrics</b>		
➤ Meet National And Local Curricular Objectives.	7	Although not directly reference in the MCAS frameworks, I think that the lesson could fit nicely into our current curriculum.
➤ Provide identifying templates for lesson plans.	1 Strongly Disagree	not provided
➤ Provide identifying guidelines for creating assessment rubrics.	1 Strongly Disagree	not provided
<p>Classroom and curriculum feasibility:</p> <p>Time one 50 minute class period</p> <p>Materials computeres running World Watcher</p> <p>Logistics</p> <p>Management I had to work out the kinks in part A (Celsius and Kelvin) before giving the lesson to students.</p> <p>Demands on teacher Once the problems in part A were worked out, the lesson went relatively smoothly.</p> <p>Student skill prerequisites Students with computer experience had a few problems.</p> <p>What are some other feasibility issues for this resource or lesson(s)?</p>		

Completing, Testing, Reporting and Continuing		
The lesson or investigation results in a product	7	completed tables and questions could be checked
The outcome of the lesson or investigation is useful to a real audience.	7	I would like to see more emphasis on biodiversity.
Results can be disseminated through science fairs, poster presentations, and publications.	1 Strongly Disagree	not really applicable
Project can be sustained through Grant Sources and Partnership opportunities at the Local, Regional and National Level	1 Strongly Disagree	not applicable

Additional Comments Not Covered:

Provide a data chart to summarize information at the end of part A.

Don't quit the application at the end of part C prior to completing the wrap up questions.

Most teachers will be working with black and white printouts. Therefore, I would recommend using a graph with black and white patterns rather than color in the wrap up section