

## BSC 307 PBL Web Quest Rubric

### Overall PBL Structure:

0	1	2	3	4
Problem meets none of the 4 criteria of ill structured problems.	Problem meets 1 out of the 4 criteria of ill structured problems.	Problem meets 2 out of the 4 criteria of ill structured problems.	Problem meets 3 out of the 4 criteria of ill structured problems.	The ill structured problem is... <ul style="list-style-type: none"> <li>• Messy &amp; complex in nature</li> <li>• Requires inquiry, information gathering, &amp; reflection</li> <li>• Changing and tentative</li> <li>• Without a simple, fixed, formulaic or right solution</li> </ul>

0	1	2	3	4
Problem meets none of the 4 criteria.	Problem meets 1 out of the 4 criteria.	Problem meets 2 out of the 4 criteria.	Problem meets 3 out of the 4 criteria.	The problem... <ul style="list-style-type: none"> <li>• Mirrors a real world scenario</li> <li>• Provides an initial challenge and motivation</li> <li>• Appeals to the human desire for resolution/stasis/harmony</li> <li>• Sets up the need and context for learning which follows</li> </ul>

0	1	2	3
PBL meets none of the criteria.	PBL meets 1 out of the 3 criteria.	PBL meets 2 out of the 3 criteria.	PBL sets up students to be active participants who are engaged in learning, decision-makers, and involved in constructing meaning during the learning process.

0	1	2	3
PBL meets none of the criteria.	PBL meets 1 out of the 3 criteria.	PBL meets 2 out of the 3 criteria.	PBL sets up teacher to be the cognitive and metacognitive coach with students having assigned roles and responsibilities within the learning process.

0	1	2	3
PBL is not science related.	PBL represents only 1 scientific discipline.	PBL incorporates 2 scientific disciplines.	PBL incorporates at least 3 scientific disciplines.

**Web Quest Portion:****Introduction:** Prepares and hooks reader, introduces the guiding question for the web quest, and is creative.

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	All 3 characteristics are represented

**Task:** Describes what the end result of the learners' activity will be.

0	1	2	3
Task is not described clearly and students can not accomplish the given task.	Task is described clearly but students will experience great difficulty in accomplishing the given task.	Task is not described clearly but students can accomplish the given task.	Task is described clearly and students can accomplish the given task.

**Process:** Clear steps, resources, and tools for organizing information are provided

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	All 3 characteristics are represented

**Evaluation:** Criteria are provided, product matches task, & product is an effective measure of the overall goal of the web quest.

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	All 3 characteristics are represented

**Conclusion:** Summary of what was accomplished/learned, encouragement to learner, and further learning opportunities provided.

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	All 3 characteristics are represented

**Teacher Page:** Provides information about target learners, standards, unit schedule, and notes needed for teaching the unit.

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	All 3 characteristics are represented

**Aesthetics:**

0	1	2	3
5 or more grammar or spelling errors	3-4 grammar or spelling errors	1-2 grammar or spelling errors	No grammar or spelling errors

0	1	2	3
3 or more links do not work	2 links do not work	1 link does not work	All links work

0	1	2	3
None of the characteristics is represented	1 out of the 3 characteristics is represented	2 out of the 3 characteristics are represented	Web Quest format is attractive, graphics enhance the effect, and web quest is easy to navigate.

**Score: \_\_\_\_\_ / 44 points**

### Related NSTA Standards:

#### Standard #1: Content

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)	Exceptional (4)
Unifying concepts of science	Student demonstrates the understanding of 1 or no unifying concepts of science	Student demonstrates the understanding of at least 2 unifying concepts of science but fails to apply all of them	Student demonstrates the understanding of at least 3 unifying concepts of science but fails to apply all of them	Student demonstrates the understanding and application of at least 2 unifying concepts of science	Student demonstrates the understanding and application of at least 3 unifying concepts of science
Personal and technological applications in science	Student demonstrates the understanding of neither a personal or technological application in science.	Student demonstrates the understanding of either a personal or technological application in science.	Student demonstrates the understanding of at least 1 personal and 1 technological application in science.	Student demonstrates the understanding of at least 3 personal and technological applications in science.	Student demonstrates the understanding of at least 4 personal and technological applications in science.

#### Standard 2: Nature of Science

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)
Understanding the historical and cultural development of science and the evolution of knowledge in the discipline.	<p>Student demonstrates understanding of none of the three following characteristics:</p> <ul style="list-style-type: none"> <li>historical development of science</li> <li>cultural development of science</li> </ul> <p>evolution of knowledge in their discipline</p>	<p>Student demonstrates understanding of 1 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>historical development of science</li> <li>cultural development of science</li> </ul> <p>evolution of knowledge in their discipline</p>	<p>Student demonstrates understanding of 2 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>historical development of science</li> <li>cultural development of science</li> </ul> <p>evolution of knowledge in their discipline</p>	<p>Student demonstrates understanding of all three of the following characteristics:</p> <ul style="list-style-type: none"> <li>historical development of science</li> <li>cultural development of science</li> <li>evolution of knowledge in their discipline</li> </ul>

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)
Understanding the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world.	Student demonstrates understanding of none of the 4 following characteristics of science: <ul style="list-style-type: none"> <li>• philosophical tenets</li> <li>• assumptions</li> <li>• goals</li> <li>• values</li> </ul>	Student demonstrates understanding of 1 out of the 4 following characteristics of science: <ul style="list-style-type: none"> <li>• philosophical tenets</li> <li>• assumptions</li> <li>• goals</li> <li>• values</li> </ul>	Student demonstrates understanding of 2 out of the 4 following characteristics of science: <ul style="list-style-type: none"> <li>• philosophical tenets</li> <li>• assumptions</li> <li>• goals</li> <li>• values</li> </ul>	Student demonstrates understanding of 3 out of the 4 following characteristics of science: <ul style="list-style-type: none"> <li>• philosophical tenets</li> <li>• assumptions</li> <li>• goals</li> <li>• values</li> </ul>

### Standard 3: Inquiry

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)
Understanding the processes, tenets, and assumptions of multiple methods of inquiry leading to scientific knowledge	Student demonstrates understanding of none of the three following characteristics: <ul style="list-style-type: none"> <li>• processes</li> <li>• tenets</li> <li>• assumptions</li> </ul>	Student demonstrates understanding of 1 of the three following characteristics of scientific inquiry: <ul style="list-style-type: none"> <li>• processes</li> <li>• tenets</li> <li>• assumptions</li> </ul>	Student demonstrates understanding of 2 of the three following characteristics of scientific inquiry: <ul style="list-style-type: none"> <li>• processes</li> <li>• tenets</li> <li>• assumptions</li> </ul>	Student demonstrates understanding of all three of the following characteristics of scientific inquiry: <ul style="list-style-type: none"> <li>• processes</li> <li>• tenets</li> <li>• assumptions</li> </ul>

#### Standard 4: Issues

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)
Understanding of socially important issues related to science and technology in their field of licensure, as well as processes used to analyze and make decisions on such issues.	<p>Student demonstrates understanding of none of the three following characteristics:</p> <ul style="list-style-type: none"> <li>socially important issues related to science</li> <li>socially important issues related to technology in their field</li> <li>processes used to analyze and make decisions on such issues</li> </ul>	<p>Student demonstrates understanding of 1 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>socially important issues related to science</li> <li>socially important issues related to technology in their field</li> <li>processes used to analyze and make decisions on such issues</li> </ul>	<p>Student demonstrates understanding of 2 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>socially important issues related to science</li> <li>socially important issues related to technology in their field</li> <li>processes used to analyze and make decisions on such issues</li> </ul>	<p>Student demonstrates understanding of all three of the following characteristics:</p> <ul style="list-style-type: none"> <li>socially important issues related to science</li> <li>socially important issues related to technology in their field</li> <li>processes used to analyze and make decisions on such issues</li> </ul>

#### Standard 7: Science in the Community

Criteria	Unacceptable (0)	Developing (1)	Basic (2)	Proficient (3)
Teachers of science relate their discipline to their local and regional communities, involving stakeholders, and using individual, institutional, and natural resources of the community in their teaching.	<p>Student demonstrates understanding of none of the three following characteristics:</p> <ul style="list-style-type: none"> <li>relating science to the community</li> <li>involving stakeholders</li> <li>using community resources to promote the learning of science</li> </ul>	<p>Student demonstrates understanding of 1 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>relating science to the community</li> <li>involving stakeholders</li> <li>using community resources to promote the learning of science</li> </ul>	<p>Student demonstrates understanding of 2 of the three following characteristics:</p> <ul style="list-style-type: none"> <li>relating science to the community</li> <li>involving stakeholders</li> <li>using community resources to promote the learning of science</li> </ul>	<p>Student demonstrates understanding of all three of the following characteristics:</p> <ul style="list-style-type: none"> <li>relating science to the community</li> <li>involving stakeholders</li> <li>using community resources to promote the learning of science</li> </ul>

