

The 5 E's: A Model for Designing Lessons for Inquiry Planner¹

Logistics Information:

- a. Middle School Social Studies Learning Cycle
- b. Iowa Core Essential Concepts:
 - History:
 - Understand the effect of economic needs and wants on individual and group decisions
 - Understand the effects of geographic factors on historical events
 - Understand cause and effect relationships and other historical thinking skills in order to interpret events and issues.
 - Geography:
 - Understand how geographic and human characteristics create culture and define regions.
 - Understand how human factors and the distribution of resources affect the development of society and the movement of populations
- c. A synthesis of *Project WILD* and 8th Grade American History
- d. Developed April 17, 2010

Background Information: Students will need to be able to distinguish between “community” and “ecosystem”. Students must have background on what an ecosystem is.

Materials Required:

Copies made for student groups with student charts from page 169, lists of potential plants and animals for students to choose from, maps of shopping center or island, markers, colored pencils

Time Period:

2-3 traditional 45 minute class periods

Name of the Unit of Instruction: Ecosystem Facelift

- I. Plan of the Unit
 - a. Goals of the unit:
 - 1. Describe interactions of organisms within an ecosystem
 - 2. Understanding that managing an ecosystem for all is essential for ensuring ecosystem diversity
 - 3. Relate the increase of wildlife populations to the improvements of habitats
 - b. How this unit relates to the curriculum:

Previous Grade/Course	Current Grade/Course	Next Grade/Course
6 th Grade Science or Social Studies	7 th Grade Geography	8th Grade American History

¹ Adapted from *Teacher to Teacher: Reshaping Instruction Through Lesson Study* (NCREL, 2002)

c. Lesson Plan: Phases in a 5E Learning Cycle: Engage, Explore, Explain, Elaborate, and Evaluate.

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher’s response to student reactions/ Things to remember	Evidence of Student Understanding
<p>ENGAGE (Introduction, Anticipatory Set): Inform students they will be designing an ecosystem with a group. Tell them they will be the managers of the ecosystem and will be competing against other groups to create the most successful ecosystem possible. Tell them there are 2 different possibilities for the location of the ecosystem which will be determined by chance.</p> <p>EXPLORE (Activity, Investigation): Provide students with the description of an ecosystem and tell them they will analyze the topography. Have students select plants and animals for the ecosystem. Students will also draw a food web diagram to represent interactions between plants and animals.</p> <p>EXPLAIN (Closure): Each group will present its food web and ecosystem design to the rest of the class. Have them give reasons why they feel their ecosystem will be the most successful.</p> <p>Other groups should challenge the presenting group by questioning decisions and coming up with possible negative consequences to the decisions.</p>	<p>Students will be excited about the chance to compete against the other groups to develop the most successful ecosystem.</p> <p>Students may argue in groups about what plants and animals to select for the ecosystem.</p> <p>Encourage them to problem solve through disagreements by listing pros and cons for each option.</p> <p>Students will enjoy analyzing each group’s decisions. They will be actively engaged as they participate in a debate style forum.</p>	<p>Remind students that disagreements may arise and model for them how to handle those disagreements before beginning the lesson.</p> <p>Be prepared for students to get emotionally involved in attacking other groups’ ecosystems or defending their own.</p>	<p>Analysis of the food web diagrams that students are creating.</p> <p>Based on the quality of presentation and the reasons students give for the decisions they made.</p>

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<p>ELABORATE (Connections and Applications): Vote for which group had the best ecosystem (may not vote for own group)</p> <p>EVALUATE: Formative assessment in which students will use graphic organizers to draw on maps revealing what things are beneficial to ecosystems.</p> <p>EXTENSION: Students consider costs involved with restoring the ecosystem</p> <p>Present different locations for possible ecosystems</p>	<p>Re-teach</p> <p>Students would have to gather information on costs of plants and moving dirt.</p>	<p>necessary concepts based on the formative assessment results</p> <p>Each scenario is uniquely different.</p>	