

Marine Ecosystems and the Community

Course: Marine Science 101 – Unit 3

Date:

Problem: Get the community interested in marine ecosystems.

Details: Students must identify a marine ecosystem and create a promotional flyer (hand out) and a presentation suitable for a mixed audience representative of your local community. The goal is to get the community aware of one marine ecosystem, its inhabitants and the importance of that ecosystem to the Ocean and to the Earth. Students have to get the community excited about that habitat!

Notes: Students should be encouraged to get creative in their presentation format. While powerpoints, posters and the like get the point across, this is an opportunity for creativity and possibly integrating the arts.

Ecosystem options: Beaches (all types), Estuaries, Marshes, Mangroves, Pelagic (any zone), Seagrass Beds, Kelp Forests, Coral Reefs, Deep-ocean Vents

Brainstorm: *What are events or issues that align with the content I'm teaching (based on the standards)?*

What are the ocean ecosystems?

What biodiversity exists in each ecosystem?

What role does each ecosystem play in the ocean and on Earth?

What are some interesting facts about each ecosystem that make it unique?

How can you creatively share the information about your ecosystem with the community?

Learning Goal(s):

Students understand that...

1. Marine ecosystems are home to diverse biodiversity.
2. Marine ecosystems play an important role to the overall health of the ocean.
3. The interdependence that exists between the biotic and abiotic components of marine ecosystems is similar to the terrestrial ecosystems of which we are all a part.

Driving Question:

What are some examples?

What are the characteristics of the ecosystem?

What is it about this ecosystem that people can relate to?

How does this ecosystem directly or indirectly impact the lives of this community?

Why should our community care about this ecosystem?

Inquiry Process/Research and Investigation Plan:

What are necessary steps for students to plan for and ensure their research and/or investigation is thorough and reliable?

1. Identify student groups of three to four and assign, or have groups choose, an ecosystem.
2. Using the student template provided, research the ecosystem.
3. Create a plan that shares your best research and thinking to get the community excited and caring about that ecosystem.
4. Present your ecosystem promotion.
5. As each group presents, record in your science notebook key ideas. Ask questions regarding their proposal.

Formative Assessment and Feedback:

Identify when and how formative assessment will occur.

<i>Student</i>		<i>Instructor</i>	
1. Research assigned ecosystem. 2. Identify key points for flyer and presentation. 2. Outline key tasks and design presentation plan. 3. Presentation. Provide feedback to peer groups.		1. Identify dates for group progress review as well as research and final product goals.	
Summative assessment: <i>Identify what summative assessment will be and when it will occur. Identify how will it be assessed.</i> <ul style="list-style-type: none"> Final group presentation of their marine ecosystem. 			
Revision: <i>Identify opportunities for revision based on formative assessment feedback.</i> <ol style="list-style-type: none"> Address feedback and provide clarification and revisions as needed. 			
Communication: <i>How will students communicate their learning?</i>			
Purpose To get the community excited about a marine ecosystem.	Audience Peers. Advanced audience may include the community during science night.	Presentation Type Informal presentation with peers. Creativity is highly encouraged.	Impact Improving the community's knowledge and understanding of marine habitats.
Standards: All Content Areas <i>Not all will always apply</i>			
English-Language Arts	<i>ELA-Literacy.RST.11-12.7</i> Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. <i>ELA-Literacy.SL.11-12.1B</i> Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. ELA-LITERACY.SL.11-12.1.C Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. <i>ELA- Literacy.SL.11-12.4</i> Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. ELA-LITERACY.SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. ELA-LITERACY.SL.11-12.6 Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.		
Mathematics			

<p>Science</p>	<p>Disciplinary Core Ideas <i>Interdependent Relationships in Ecosystems</i> LS2.A Interdependent Relationships in Ecosystems ETS1.B Biodiversity and Humans <i>Human Sustainability</i> ESS3.A Natural Resources ETS3.C Human Impacts on Earth Systems</p>	<p>Science & Engineering Practices Obtaining, evaluating, and communicating information Analyzing and interpreting data</p>	<p>Crosscutting Concepts Patterns Cause and Effect Stability and Change</p>
<p>History</p>			
<p>Arts/ Technology/ PE/Languages</p>	<p>Dependent on the group presentation style</p>		