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Unit Overview: Emuht Mohay - Kumeyaay Environmental Management

Grade Level:	8th
Unit Length:	5 sessions
Original Lesson Authors:	Bree Galster and Kyle Vance
Lessons Adapted By:	Kyle Vance

Topic Overview
Emuht Mohay looks at traditional and contemporary perspectives of the environment with emphasis on the seasons, water, and plants of the traditional lands of the Kumeyaay Nation. Students will investigate their own understanding of the natural environment and supplement that knowledge with other tribal members' understanding.
Unit Goals
The unit goals will be to learn and reflect on the foundational aspects of Kumeyaay environmental management *(Emuht Mohay)* and cultural view of water and contemporary land management, as well as make personal and community-based connections to the significance of nature and the natural landscape. Students will also conduct an ethnobotany research project to become familiar with a plant of their choice.
Assessment Type
No formal assessment has been created for this unit. A KWL chart could be used and easily integrated into the lessons
Additional Context

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Lesson 1: Seasons

Anticipated Length:	60 mins
Cultural Grounding:	Indigenous peoples relationship to the land
Key Thinking Skills:	Focus and Attention, Finding connections and relationships, Comparing
Common Core Standards:	CCSS.ELA-LITERACY.SL.8.1.D Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented. CCSS.ELA-LITERACY.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
Lesson	1 Of 5

Learning Objective(s)/Competency	
Students will:	find connections and relationships between their prior knowledge of the seasons and different relationships the seasons have with the environment.
Materials:	
● Sage, shell, lighter ● List of questions for students to think about and discuss ● Paper ● Pencil	
Procedure: Describe how you will:	
Introduce/Start the Circle	● Smudging ○ Elect a group leader each week who will facilitate the group smudging ○ Go outside and smudge ● Check in ● Review Agenda
Communicate Lesson Objective/Ground the Circle	● Discussion of the Seasons (Outside) ○ What are the different seasons?

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	■ How do you know? ○ How did our ancestors relate to the seasons? ○ What connections do you have to the seasons? ■ Explain ○ What do each of the seasons offer? (What can we learn from them? What do they provide us?) ■ Students are provided opportunity to draw their thoughts and ideas on paper and share out with group ● Thinking Skills Questions ○ What difference does it make when we find connections and relationships with the seasons? ○ What difference do you think it will make if we used our focus and attention to study the seasons everyday? ○ While we are comparing the seasons, what are some attributes of the different seasons here in... San Diego, Campo,(regional location of the group). ■ Write down the different attributes the students say ● Spring ● Summer ● Fall ● Winter
Teach and Practice Content/Do the Work of the Circle	● Walking the Land (Outside) ○ As we walk the land outside, ask students to ponder and share thoughts on the following… ■ How much daylight do we have? ● How do you know? ■ Where does the sun rise? (and tracking it throughout the day) ■ How do we know what time of the year it is based on the land/environment? ■ What type of things would you notice through the lens of an environmental scientist? ■ What relationships and connections would an environmental scientist notice and find?
Summarize and Close/Close the Circle	● The Walk Away (Debrief) ○ What are you walking away with from group today? Each member shares out
Additional Considerations:	

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Past Reflections/Lessons Learned	Encourage students to ask more questions

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Lesson 2: Environmental Management Past and Present

Anticipated Length:	60 mins			
Cultural Grounding:	Kumeyaay Environmental Management			
Key Thinking Skills:	Multiple Sources, systematic search, compare			
Common Core Standards:	CCSS.ELA-LITERACY.RST.6-8.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.			
Lesson	2	Of	5	

Learning Objective(s)/Competency	
Students will:	as a group, systematically search how to get water to their community by researching past and current methods of promoting a watershed then problem solve to find a solution.
Materials:	
• Sage, Shell, and lighter • Paper • Pencils • Kumeyaay Curriculum - Appendix G • National Museum of the American Indian https://americanindian.si.edu/environment/kumeyaay/GetStarted.cshtml	
Procedure: Describe how you will:	

Introduce/Start the Circle	• Smudging
	  ○ Elect a group leader each week who will facilitate the group smudging
	  ○ Go outside and smudge
	• Check in
	• Agenda review

Communicate Lesson Objective/Ground the Circle	• Connections between the Past and Present Environmental Management

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	○ Discuss and compare the environmental designs/approaches of Kumeyaay ancestors and contemporary/present day designers ○ Underscore differences and similarities between rock drop structure and dam ○ Highlight the incredible work and design of Kumeyaay leader, Mike Connelly ■ Present visuals from Kumeyaay Curriculum Appendix G ■ Explore Smithsonian website showcasing contemporary design ■ Underscore use of traditional rock drop structure ● Thinking skills questions ○ Why might it be important to compare the past water retention solutions to present day solutions? ■ What knowledge could we gain about the past and about the future? ○ What difference does it make to be able to search through multiple sources of information rather than just one? ○ What difference does it make to have a plan or goal (system) in mind when we search through many sources of information.
Teach and Practice Content/Do the Work of the Circle	● Environmental Management Problem Solving ○ Discussion/Prompting questions (visualize responses on whiteboard) ■ Where does the Kumeyaay community get water? ■ What does it provide? ■ What would happen if the community began to run out of water? ■ What would you do to solve this problem? ■ What types of knowledge and tools would you need to solve this problem?
Summarize and Close/Close the Circle	● The Walk Away (Debrief) ○ What are you walking away with from group today? Each member shares out
Additional Considerations:	
Past Reflections/Lessons Learned	

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Lesson 3: Introduce Ethnobotany Project

Anticipated Length:	60 mins
Cultural Grounding:	Indigenous relationship with the land
Key Thinking Skills:	Goal setting, planning
Common Core Standards:	CCSS.ELA-LITERACY.SL.8.1.C Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. CCSS.ELA-LITERACY.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
Lesson	3 Of 5

Learning Objective(s)/Competency	
Students will:	investigate ethnobotany through asking questions and sharing thoughts and ideas with group members.
Students will:	Create a goal and a step by step plan to follow to complete their research project using questions to guide their research.
Materials:	
• Sage, shell, lighter • computers (chromebooks) • Pencil • paper • questions for discussion	
Procedure: Describe how you will:	
Introduce/Start the Circle	• Smudging ○ Elect a group leader each week who will facilitate the group smudging

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	○ Go outside and smudge ● Check-in ● Agenda Review
Communicate Lesson Objective/Ground the Circle	● Introduce Ethnobotany Project ○ Define ethnobotany: ■ the scientific study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses. ○ Ask students to respond to this definition with questions, thoughts, and ideas they have after hearing the definition. ○ Pose the following questions: ■ What does the local plant life provide for the Kumeyaay community? ■ How is the local plant life managed? ■ How did our ancestors view and use plants? ■ How do we show respect for plant beings?
Teach and Practice Content/Do the Work of the Circle	○ Explain to students they will be choosing a plant to research. ■ Ask students about the plants they already know about or are familiar with. ■ Ask about plants they want to learn more about or don't know much about ○ Explain that for this project we will need to practice Goal Setting and Planning. ○ Survey the land outside ○ Take pictures of plant life/environmental beings students would be interested in learning more about. ○ Ask students to research and pick at least one plant/environmental being to focus on for their ethnobotany project. ■ Students should explain why they are choosing a plant/environmental being. ■ How will this inform your relationship with the natural world?

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	■ How will this inform your relationship with your ancestors? ■ How will this inform your identity? ■ What other questions do you have? ● How will these questions guide you in your research? ● Ask students to write out questions they have about the plant of choice ○ Have students respond with thoughts, ideas, and other questions about this project. ● Thinking Skills questions (Have students write out their goal and their steps to accomplish their goal): ○ What is your goal for this project? ■ What is it you want to accomplish by researching and learning more about the plant of choice. ■ What do you want to do with the knowledge you gain from this project? ○ How do you plan to achieve this goal? Explain step by step.
Summarize and Close/Close the Circle	● The Walk Away (Debrief) ○ What are you walking away with from the group today? Each member shares out
Additional Considerations:	
Past Reflections/Lessons Learned	

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Lesson 4: Ethnobotany Project

Anticipated Length:	60 mins
Cultural Grounding:	Kumeyaay/Indiegnous relationship with the land
Key Thinking Skills:	Systematic Search, multiple sources, summarizing
Common Core Standards:	CCSS.ELA-LITERACY.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
Lesson	4 Of 5

Learning Objective(s)/Competency	
Students will:	begin systematically searching their plant of choice by using multiple sources of information.

Materials:

- Sage, shell, lighter
- computers (chromebooks)
- Pencil
- paper
- questions for discussion

Procedure: Describe how you will:

Introduce/Start the Circle	● Smudging ○ Elect a group leader each week who will facilitate the group smudging ○ Go outside and smudge

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Emuht Mohay - Kumeyaay Environmental Management

	● Check in ● Agenda Review
Communicate Lesson Objective/Ground the Circle	● Review Ethnobotany definition ● Have students review what goal setting and planning are and how they help guide us. ● Review plants selected for research projects and students' individual goals and plans to achieve those goals before researching. ○ Emphasize the importance of having a target such as a goal to aim for and guide us. ○ Also emphasize how planning, having multiple steps to follow, keeps us on track to hit our target when we get distracted or forget our plan. ○ (Make sure students have their plant, goal, and plans written down so they can be referenced later)
Teach and Practice Content/Do the Work of the Circle	● Ethnobotany Project Continued... ○ Give students an opportunity to share with each other, in pairs, about their selected plant/environmental being they plan to research. ● Share their plans, goals, and questions that will guide them in the research process. ■ Students will use chromebooks and ethnobotany resource texts to research selected plant, specifically answering the following questions: ● What is the Kumeyaay name for the plant? ● What does the plant provide to the community? ○ Any products made from it? Is it edible? Medicinal? ● Any stories, traditions, values, or beliefs connected to the plant? ● Any other interesting facts about selected plant? ● Is is endangered? ● How can we help to preserve and protect it?

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	● Any other relevant questions ○ Check in with students while they research and ask about their plan and goal ■ How has your step by step plan helped you while researching? ■ Has your plans changed? If so how? ■ Has your goal changed? If so how? ■ What new questions do you have since you started researching?
Summarize and Close/Close the Circle	● The Walk Away (Debrief) ○ What are you walking away with from group today? Each member shares out
Additional Considerations:	
Past Reflections/Lessons Learned	

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Lesson 5: Ethnobotany Project

Anticipated Length:	60 mins
Cultural Grounding:	Kumeyaay relationship with land
Key Thinking Skills:	Systematic search, multiple sources, labels words and concepts summarizing
Common Core Standards:	CCSS.ELA-LITERACY.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
Lesson	5 Of 5

Learning Objective(s)/Competency	
Students will:	compile information gathered for research projects and choose a way to present that information using various media methods (poster board, powerpoint, etc.).

Materials:

- Sage, shell, lighter
- computers (chromebooks)
- Pencil
- paper
- questions for discussion
- markers
- poster board
- construction paper
- printer
- scissors
- glue
- tape

Procedure: Describe how you will:

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Emuht Mohay - Kumeyaay Environmental Management

Introduce/Start the Circle	• Smudging
	  ○ Elect a group leader each week who will facilitate the group smudging
	  ○ Go outside and smudge
	• Check in
	• Agenda Review

Communicate Lesson Objective/Ground the Circle	• Ethnobotany Project Continued…
	  ○ Students will compile information thay have researched for their ethnobotany project and choose how they will present the information.
	  ○ Students will search for relevant visuals, such as a photo of their plant, to include in their presentation in addition to their research findings using specific labels, words and concepts.

Teach and Practice Content/Do the Work of the Circle	○ Students will practice their presentation with a peer then share out their final project with the group. ○ Students will have a chance to ask questions about their peers projects and the presenters will have a chance to respond to those questions.
Summarize and Close/Close the Circle	• The Walk Away (Debrief) ○ What are you walking away with from the group today? Each member shares out
Additional Considerations:	
Past Reflections/Lessons Learned	Students' presentations of their research projects can be done for only their group, for a classroom, for another group (younger), or for their community. It all depends on time and the group's preference. This is something to discuss at the beginning of this unit.

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