

# CREATE YOUR OWN SUSTAINABLE ISLAND

## Teacher Overview

**Grade Level:** 6th–8th

**Length of Time:** Two 45 minute class periods

### Essential Questions:

- What is the importance of history in the Marshall Islands?
- What conservation and sustainability efforts are the Marshallese currently taking?
- How does island ecology play a role in conservation and sustainability?
- How can we design an island that is sustainable and focused on conservation?
- How do we get others on board to help promote and sustain our mission?

### Standards:

- Next Generation Science Standards
  - **MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics.** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
  - **MS-ESS3-3 Earth and Human Activity.** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

### Materials:

- Maps of islands around the world (Example: Google maps/Google Earth)
- Electronic device connected to internet to research
- Paper (poster size preferably)

### Introduction:

Tell the students: Today is your chance to design an island! Many island cultures have developed conservation practices to help with the sustainability of their island and to promote positive connections amongst sharing our water. The Marshallese is one example of a culture who has pledged to practice conservation and manage ocean resources for many generations. I challenge you to create the best ecological Island!

### Activity:

- Using a blank piece of paper, ask students to answer the following questions:
  - What does conservation mean?
  - What does sustainability mean?



- How do people living on islands demonstrate conservation and sustainability?
- What do islands, such as the Marshall Islands, struggle with when it comes to conservation and sustainability?
- Share background information (located at the end of the lesson document) of the Marshallese history and discuss the current conservation and sustainability efforts that are currently being put into place. This is one example of people implementing sustainable practices within their community.
- In discussion share the definition of the following key vocabulary words:
  - **Conservation:** prevention of the wasteful use of resources
  - **Sustainability:** fulfilling the needs of current generations without compromising the needs of future generations. Making sure there is a balance between economic growth, environmental care and social well-being.
  - **Solution:** solving a problem; coming up with an answer
  - **Uninhabitable:** unsuitable to or unable to live in that area
- Students will research islands to learn about the islands ecology, industries and conservation initiatives. Encourage students to take notes and write down positives of what is currently being done, and what they would like to improve.
- Students may want to pair up in groups to share their ideas with each other. They will then design a perfect island.
- Students will need to develop a plan of action for that island with the focus on the areas of conservation and sustainability. The following questions should be answered:
  - What is their islands name?
  - How did we design our island to be sustainable and focused on conservation?
  - How do we get others on board to help promote and sustain our mission?
- Allow some time for students (two 45-minute class periods) to come up with a proposal listing their ideas and solutions for their island.

### **Wrap-Up:**

Give students the post survey. Use the same questions found in the pre-survey.

### **Extension:**

Students can construct their possible island using recyclable items. Then, they could showcase their proposal and their island to their peers or other adults.

### **Background Information:**

- At the National Mississippi River Museum & Aquarium: The Rivers to Sea exhibit (located in the East Building) opens with a Marshallese-built canoe. The canoe was an integral part



of the culture of the island – noted for their speed and for their ability to sail at least 500 miles these canoes are still in use today, particularly away from urban areas, as gasoline is costly. The islands economy is based on exports of sustainably sourced tuna, coconuts, refined petroleum products, boat and boat-related products.

### **Geography:**

- The Republic of the Marshall Islands is located in the Pacific Ocean about halfway between Hawaii and Australia. The country consists of two nearly parallel chains of five coral islands and 29 atolls, 22 are inhabited.
- Total land area is about the size of Washington, DC
- WWII –The US administered the islands and used the atolls of Bikini and Enewetak for nuclear weapons testing. In the 1940’s-1950’s-four atolls were rendered uninhabitable due to nuclear testing.
- The islands were part of the Trust Territory of the Pacific until gaining independence in 1982 and have a special relationship with the US under the Compact of Free Association, with aid and domestic assistance in exchange for exclusive US military access and defense.

### **Environmental Impacts:**

- Despite being a very long way from densely-populated areas, the Marshall Islands are vulnerable to man-made problems.
- Sea level rise due to global warming is causing aquifers to be invaded with sea water, salinization of soils, and loss of habitable land.
- The four islands affected by US atomic bomb tests continue to be uninhabitable due to high levels of radiation from nuclear fallout.
- Pollution and plastics in the ocean break down into fragments that cannot be recovered and end up in animals and the soil.
- The Marshallese have developed a plan for the future: Reimaanlok. Translated as “look to the future,” this is the island’s community-led plan for resource management that connects cultural insight with scientific data for a sustainable future.

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