Training Header Sheet with Change Log Form

Kentucky Academic Standards
Science
Operational 2019

SCHS1622_05

Deforestation
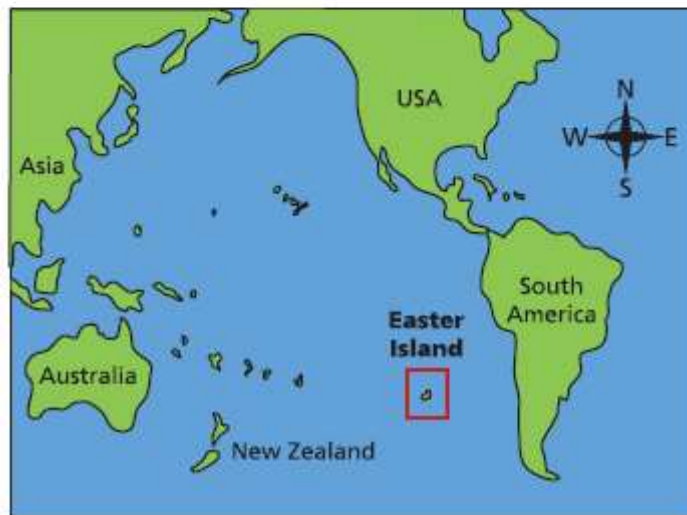
Anchor Set

Date	Comments	Version
3/2019	Initial Operational Training Set	Set A

Jamal was learning about ancient civilizations in his social studies class when he came across a picture of a giant stone statue located on the volcanic island Easter Island. He was fascinated by the picture and decided to learn more about where Easter Island is located and who lives there.
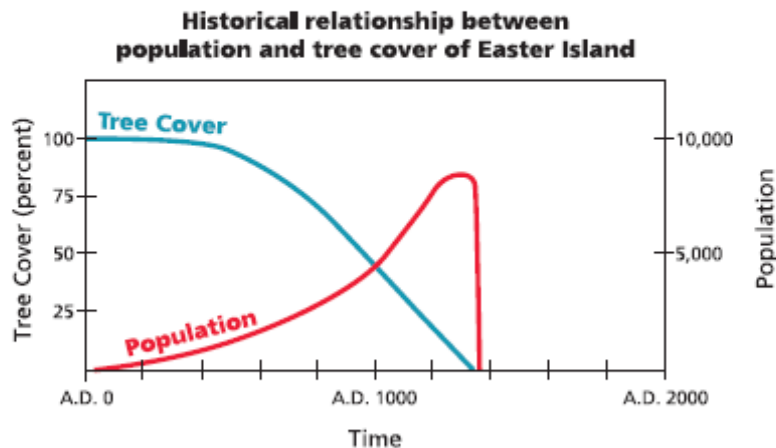
He was surprised to learn that Easter Island is now essentially deserted, but at one time as many as 10,000 people lived there. He also learned that the environment is radically different now than it was when the first people arrived. It was once covered by a lush rain forest but now supports only minimal, low vegetation. The people who first colonized this island came in search of new resources to use.

Jamal wondered, "What happened to all of the trees and all of the people?"

Jamal learned how valuable trees were to the inhabitants when he read the passage below:

To the people of Easter Island, trees were wealth. In fact, the words for tree and wealth were used interchangeably. The islanders used trees in almost every part of their daily lives. Beyond obvious uses as firewood and for house building, the trees provided fruit and birds for the islanders to eat. The bark was used to make clothes and the fibers for rope. Tree trunks were used to create oceangoing canoes, allowing the islanders to harvest deep-water fish such as tuna, using harpoons made from the branches. Most famously, perhaps, the logs were used to make rollers and other parts of the transport system responsible for moving the hundreds of stone statues that were distributed across the island.

Jamal discovered that researchers have constructed a model showing the relationship between the island's inhabitants and the percentage of the island that was covered by trees.

Historical relationship between population and tree cover of Easter Island
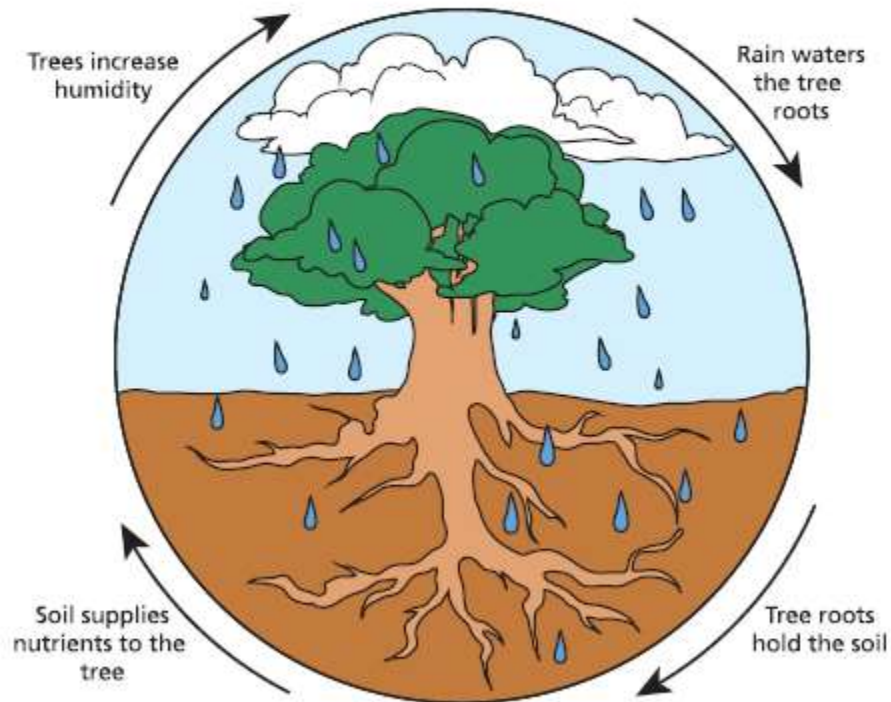

Archaeologists have searched through the garbage of the ancient inhabitants to look for clues about when the tree population decline began to impact other parts of the environment.

One thing Jamal learns is that the rainfall amounts on the island today are lower than they were in the past, and that scientists believe that people were responsible for changing the amount of rainfall on the island. Jamal finds a model that explains how this might work.

Jamal thought, "I don't understand why the people kept cutting down all the trees. It sure seems like once they knew what was going on that they could have done something to prevent all the trees from being cut down."

Prompt

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Use your understanding of environmental impacts due to human involvement to design a solution that could have allowed the Easter Island civilization to maintain itself by preventing deforestation. Be sure your description of the solution explains:

- how the solution's impact would be monitored
- how the solution would be effective in addressing the main cause of the problem

When trees were cut down, there was less humidity and less rainfall.

The main cause of the problem is the people were using too much wood. If they didn't make the big bead Stones, and less boats. They couldve Staded alive.

They have to cut down all the trees to making fields and growing up food like corn or something.

they should make the fields on gras areas and not on forests or where trees are at.

They could plant more trees in the place where they cut.

The main cause of the problem is the lack of resources in demand. Therefore, the solution is simple: increase the amount of resources. For every tree used let two be planted.

One Solution is having a group of people watch for people trying to cut them down. If they see them they get in trouble then they have to do work to be free. This would keep people from cutting so many down.

The people of Easter Island could have replanted more of the tree seeds/sapplings than they used and limited the harvest on trees, if this happened they would have used trees more wisley, only making what they need

A Way Easter Island Civilization Could've Prevented de.forestation is by use Pillers of Stone Carved to roll the Statues where they were needed. Easily Prevent hundreds of trees from being cut. Monitor tree loss by how many are cut down a day or week & try to Prevent over cutting.

A solution to prevent deforestation would be to limit the amount of trees cut down, and to reuse and share supplies made from trees so more will not have to be cut down. There could be one area of trees that are off limits. They could also plant more trees. This will allow there to always be trees, and more will grow that they can use.

A Solution that could have allowed Easter Island civilization to maintain itself by preventing deforesatation, would be to plant more trees. The island could make a rule where for every tree that you cut down you have to plant 2 back. This would be the most simiple thing for the island to do. It would get right down to the main cause of the problem. There could also be a rule were Cotting trees would be limited. This way there would be time for the trees they planted to grow back,

As a solution it would be mandatory that if someone cuts down one tree, they would have to plant ten in its place. There would be one person in charge of giving permission to cut down any trees. People would have to come talk to this person before they would be allowed to cut down any trees.

This solution would be effective because by the time you cut two trees down, you will have planted twenty in there place.

The Easter Island civilization could've stopped deforestation by doing one of three things: used the weather as an indication that they're cutting down too many trees, plant trees, or use other items to create different things. For examples, when they saw the rain decreasing over the years they could've started using less trees; thus declining deforestation. When they cut down a tree, they could've somehow replanted part of it for regrowth, thus slowly stopping deforestation. Finally, in the information I read, it said they used wood for clothes, rope, canoes, ect. They could've used other materials on the island to make some of their things — wool for clothes, vines for rope, cylindar pieces of stone for transportation, and even more. Doing that would've largely decreased the need for trees.

If the Easter Island civilization would've done one of those ideas they would've been able to be their longer and stop the deforestation from happening so quickly.

To allow the Easter Island Civilization to maintain itself, the solution could be limiting tree harvest and planting for recovery. Putting a cap on the # of trees harvested each month and then planting 3x that amount. This would be addressing the major cause, which is over harvesting. The solutions impact could be monitored monthly by counting & categorizing all trees on the island (by age/size: sapling, young adult, growing, mature, etc) Tracking this would help to plot growth. The data should never go down, saplings should always be growing.

The Easter Island Civilization could have set limitations on the number of trees permitted to be cut down as well as started to plant new trees. If they do both a cycle will begin and the trees will not become scarce to the point of creating issues in the surrounding environment. There could be a ratio set in place saying for every tree you cut down you must plant 2 new trees. Then the trees will still be able to help the environment and be used for future necessities. Also if the limit on what number can be cut down is in place people will only have the amount they need to use and it will help increase the supply of the resource.

Easter Island could have maintained itself if inhabitants had a system to re-plant trees after they were cut down. A rule could have been established that said "A tree must be at least 15 years old to cut it down, and for every tree cut down, three must be planted in it's place." There should also have been no reason for fruit trees to be cut down, since they provided food for people (unless fruit trees were the only trees on the island).

Each year, a "tree count" could have been done to ensure there would be enough trees to use for the next year, and set a number of trees that MUST be growing to use in the future.

This solution would ensure that a steady amount of trees was always availabe and would have also meant that there would always be more to use in the years to come.