

Ecosystem Services - Trees

Secondary

Key Inquiry Questions

1. What ecosystem services do trees provide?
2. What can people give to trees?
3. What does it mean to be a steward and how can people be stewards for the trees?

Learning Outcomes

1. Students will be able to define specific ecosystem services trees provide by the end of the lesson.
2. Students will be able to utilize their creativity skills in the creation of a song by the end of the lesson.
3. Students will be able to think critically about what they can provide for trees and how they can be stewards for the trees by the end of the lesson.

Sustainability Curriculum Goals

Systems Thinking:

1. Our planet - the biosphere - is a complex system that supplies resources and creates conditions that sustain life on Earth.
2. All forms of life, including humans, are connected to each other through man-made and natural ecosystems on which their well-being depends on.

Sustainable Futures:

1. Actions associated with a sustainable future reflect values of care, respect, responsibility, empathy, and compassion for all living and nonliving things.
2. Sustainable futures involve actions that work to preserve, protect, and/or restore the natural environment.

Activities/Goals:

1. Students should be able to explain what sustainability is, the importance of ecosystem services and biodiversity.

Overview:

The lesson will begin with the students playing a minute to win it game as a means of introducing how much humanity depends on trees. Students will then continue by writing down why they think trees are important to their lives as a means of setting the base for their

understanding before the activity begins. The students will then learn what it means to be a “steward” and relate that to how they can learn to be “stewards of the trees” through reading a book about a man who is. Next, students will complete a critical thinking activity based on the book they read. Students will complete 2 concept maps in order to showcase their understanding of the material learned and challenge their thinking about material that was not explicit in the book. Students will conclude with sharing what they learned about the importance of being stewards of the trees and all of the things trees do for life on Earth with their class and community by creating a rhyme or a song. This will engage their minds in a different way than critical reading does, allowing them to express their own creativity.

Materials

SolarSPELL Resource:

1. “Jadav and the Tree Place | Global Digital Library” (Environment > Natural Habitat > Jadav and the Tree-Place | Global Digital Library)

Other:

1. Notebooks
2. Pencils

Suggested Procedure

It is recommended that you complete the “Ecosystem Services - What does the Earth Provide” lesson before this one.

Before Lesson:

- Before beginning the lesson, ask the students if they remember what ecosystem services are? Alternatively, you could ask students what the concept is for benefits humans receive from nature for free?
 - Answer: Ecosystem services are the free benefits humans receive from nature.
 - Answer: Ecosystem services.
- Tell students they will be learning about the ecosystem services of trees today.
- Minute to win it: Give students one minute to look around the classroom and write down as many products as possible that are made from wood.
 - Potential products include: pencils, chairs, desks, bookshelves, paper, rulers.
 - Ask students to raise their hand if they have at least 3 things... 4 things... 5 things... Etc. until there are no more hands raised.
- Ask students to discuss in their groups what the classroom might look like if there were no items created from wood.
 - Walk around to listen for answers.
 - Call on 3 students to share their groups' answers.



- Ask students where the wood products came from? Call on students to answer, until they answer correctly.
 - Answer: Forests/Trees.
- Ask students, as a group, to write down a list of all the ways they think forests are important to their lives.
 - Do not share these lists. Students will come back to these at the end of the lesson.

During the Lesson:

- Start the lesson by writing the word “Steward” on the board or having students write it down in their notebooks.
- Explain to the students that people who take care of, don’t harm, and treat things with respect are called stewards of those things.
- Ask students what they think people who are “Tree Stewards” do?
 - Possible answers: they are friends to the trees, they take care of the tree, they don’t cut down all of the trees, they plant trees, they use both sides of their sheets of paper, they try to use reusable cups instead of paper cups, they do what they can to make sure the trees stay around for a long time.
- Now, inform students that they will be reading a story about a man who is a steward of the trees.
- Give students 10 minutes to read the book titled “Jadav and the Tree-Place”.
- Tell students to take down notes about why they think trees are important for all life on Earth and on what they can do to give back to the trees.

After Lesson:

- The Concept Map: A concept map portrays a relationship between concepts.
 - Map #1:
 - Have students fill in the concept map worksheet with all of the uses of forests for humans and wildlife.
 - Allow students to write in and/or draw answers.
 - Prompt: What do humans and wildlife get from trees?
 - Possible answers: nutrient cycling, recreational activities, habitats for survival, homes, produce oxygen, clean water, clean air, classroom supplies, sense of community, flowers that are food for pollinators and allow bees to make honey, shade, temperature control, carbon capture, water filtration, stormwater management, erosion prevention, replenishment of groundwater, protection from floods.
 - If printing is not available, students can draw their own.
 - A note for the teacher: A concept map is a diagram that portrays suggested relationships between concepts.
 - Map #2:
 - Have students fill in a second concept map worksheet with all of the things that humans can do for forests.

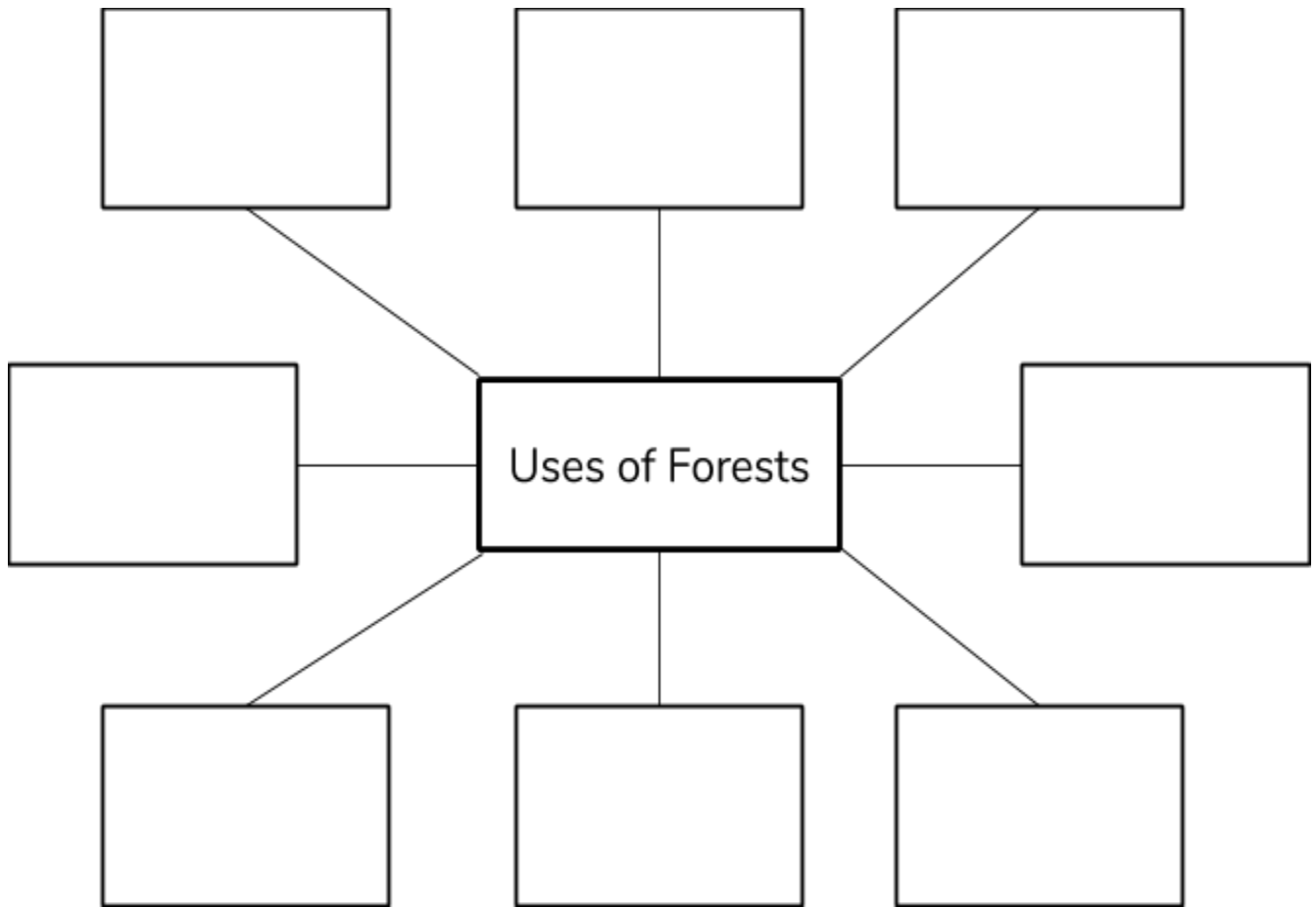
- Prompt: How can humans give to trees?
 - Possible answers: humans can do their best to not cut trees down, reduce pesticide use, only use trees for firewood when needed, switch to using solar energy for cooking

Assessment:

- Have students return to their list from the beginning exercise.
- Give students 5 minutes to add to their list.
- Ask students, by a show of hands, how many of them added something.
- Now, instruct students to create their own song or rhyme about what they have learned in class. Their songs and rhymes should include things that trees give humans and things humans can give to trees.
 - Let the students know that all members of their group must participate.
 - Give students as much time you feel is necessary to complete this task.
 - Realistically, between 20 - 30 minutes should be enough time.
- Once students are finished, have all the students present their songs and rhymes to each other and the community (if possible) to teach them about the importance of trees.



Concept Map #1



Concept Map #2

