

WEB OF LIFE

METHOD

Through an interactive story, students explore how everything in the natural community is interconnected.

MATERIALS

- Ball of yarn or string
- Large index cards
- Character cards (provided)
- Markers or crayons
- Student Worksheet

INTRODUCTION

The earth is composed of both natural and human-built environments. All of these environments, or communities, are made up of a web of relationships between people, resources, and other living things. In this activity, students will see the connections between community members living in a forest and what can happen to the whole web when one part is altered. By taking on the role of one of the forest community members, students will discover cause and effect relationships between the actions of people and animals, and the balance of a specific environment.

PROCEDURE

1. To prepare for the activity, each student will need a name tag indicating which community member they will be in the story. You can distribute the images provided, giving one card to each student, and allow the students to color them. Then paste the image on an index card. Or, students can draw their assigned community members directly on the index card. Whatever your source of pictures, be sure to write the creature or item's name below the image.



CONCEPT

In an ecosystem, everything is connected to everything else and the well-being of one can affect the well-being of all.

GRADE LEVEL

Lower and upper elementary

SUBJECTS

Science, Language Arts, Social Studies

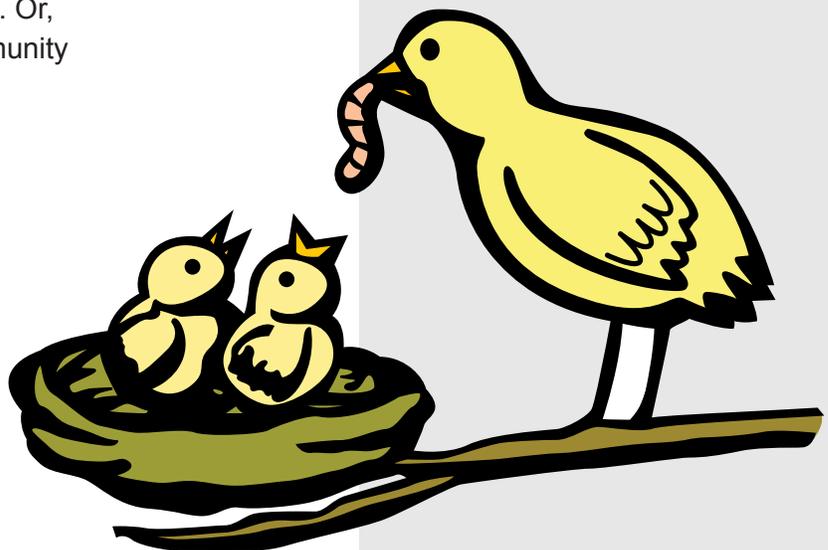
OBJECTIVES

Students will be able to:

- Name two relationships between living things in a forest.
- Explain the interconnectedness of all members of an ecosystem.
- Identify two things people can do to help keep forests and forest creatures healthy.

SKILLS

Drawing connections, explaining cause and effect, cooperating, listening, observing, role playing, imagining, conducting research, creative writing



Members of the Forest Community:

- | | | |
|----------|-----------|------------|
| a. Sun | f. Bird* | k. Plant* |
| b. Water | g. Worm* | l. Rabbit* |
| c. Air | h. Soil | m. Fox* |
| d. Ant* | i. Flower | n. People* |
| e. Tree* | j. Bee* | |

* Characters that should be doubled up if the class size exceeds 14 students. When more than one student plays a given role, the two students should sit together in the circle.

Note: You may want to replace some of the generic characters with plants/animals that are common in your area in order to make connections to your specific location/environment. For example, if you're in Wisconsin, rather than just using "bird," use "robin," the state bird. Or instead of "tree," use a tree that is visible from your classroom window.

2. Each student assumes the role of one member of the forest community listed above. The corresponding pictures will serve as the nametag for characters in the story and should be hung around students' necks with yarn, or taped to their shirts.
3. Have the students sit in a circle on the floor, making sure they are not in the order of the character list above. The teacher will stand and narrate the story. A ball of yarn will be passed to each student when his/her character's name appears in bold capital letters in the script. The crisscrossing yarn inside the circle will gradually form a web.
4. The "sun" will be the first student with the yarn ball. Then, when you get to "tree," the "sun" should roll, rather than throw, the ball to the "tree" while holding onto the end of the yarn. Continue to have the students hold a piece of the yarn and the roll then ball with the mention of each new character. It's best if they keep their hands close to the floor so the yarn will lie flat inside the circle and the teacher can walk over the yarn. The yarn is only passed to each student once, when his/her character's name is first mentioned.
5. When the story is over and the web is complete, have the students stand, lifting their part of the yarn so the whole group can see the web at work. Go over the Discussion Questions.

FOR UPPER ELEMENTARY STUDENTS:

6. Now that the students have experienced the forest community's web, challenge them to look at the webs of other ecosystems. Divide the class into small groups and assign each a different ecosystem. These could include: prairie/grassland, fresh water lake, desert, arctic tundra, beach/coastal, mountain, or wetlands.
7. Each group should conduct research to discover what community members make up their assigned ecosystem. Have the students write a story about the interconnectedness of their ecosystem, using the community members as characters and their assigned ecosystem as a setting. Allow the groups enough class time to research and write the story, or, you may want to assign parts of the project as homework.

8. Select several of the student-written stories to read aloud in class and have the students create a yarn web. As a group, discuss potential threats and then ways to protect each of the ecosystems and the community members within them.

Forest Community Story

Instructions to the students:

“Imagine that you’re no longer in the classroom but outside in the sunshine, surrounded by the smells and sounds of a forest. Imagine that you are becoming the part of the forest pictured on your nametag.

I’m going to read a story about this forest, which shows how important each member of the forest is to all the other members. As I tell about your part of the forest, a classmate will pass a ball of yarn to you. Take hold of the yarn, and when I read the next character, roll the ball to that new person.

Don’t let go of your part of the yarn, but hold it down on the floor so I can walk around inside the circle and help pass the yarn to the next person.”

Interactive Story:

Our forest community grows healthy and strong with the light of the **SUN**.

[Hand the ball to the child who is the sun.]

All of the creatures in the forest depend on the sun’s energy. It keeps them all warm and helps them grow. Rain has just stopped falling in the forest and has given every thirsty thing a big drink of **WATER**. The day is cool from the afternoon rain. The cool **AIR** is what the forest breathes. Take a deep breath. We all need the sun, water, and air to live.

A hard-working **ANT** is making its way through the forest. He is looking for a place to make his home and spots a tall, beautiful **TREE**. The forest trees stretch from the ground to the sky and look to the sun to give them strength. *[With older students, explain the complementary relationship between people and trees. People inhale oxygen and exhale carbon dioxide while trees, and other plants, take in carbon dioxide and produce oxygen.]*

The forest is full of life today. A colorful **BIRD** sings from the branches of one of the trees and looks around on the ground below for food. It spots a **WORM** moving around on the forest floor that will make a perfect lunch. *[The web is beginning to take shape.]*

The worm wiggles on the ground and eats the leaves that have fallen from the trees. Thanks to this working worm, the **SOIL** of the forest is clean and is a good place for things to grow. *[For older students, explain how the worm, ants, and other insects are part of the process of decomposition. They might be small, but they are still very important parts of the forest community.]*

Nearby, a **FLOWER** has sprouted from its seed in the ground and waves its petals in the wind. Its roots find food in the soil. This flower has been waiting for the busy **BEE** to buzz by and leave the pollen that helps it make the seeds for next year’s flowers. *[With older students, elaborate on the process of pollination and explain that the flowers depend on the bee for this process.]*

The roots of this flower dig deep into the soil of the earth. Next to the flower is a **PLANT** getting warm from the rays of sunlight coming through the trees. The raindrops have dried on its leaves. This healthy plant is food for the **RABBIT** who hops by, ready to take a bite of its green leaves. A **FOX** watches the fuzzy rabbit from behind a log, keeping an eye on its food for the day. *[For older students, explain that plants are producers because they create their own food by using energy from the sun. Rabbits and foxes are consumers because they cannot create their own food and must eat other organisms for energy.]*

But suddenly, the fox hears a loud sound and runs off to hide. Two **PEOPLE** are walking through the forest. They are picking plants and flowers as they walk. They are happy to be in the woods where the air is cool and the animals play. From way up in the branches of the tree, the bluebird sings its welcome song. They stop for a moment to enjoy this special place and then they walk on.

[Each child in the circle is now holding part of the yarn, ending with the two people who have entered into the forest community. Ask the class to stand up, being careful not to let go of their part of the yarn. They should continue to stand in the circle through Discussion Question 5, below.]

DISCUSSION QUESTIONS

1. Look how the web has grown and how many of the strings overlap. Think about the importance of the relationships within the forest. For example, what effect did the people walking through the woods have on the web?

They picked flowers and plants.

If the plants are taken from the forest, which other creatures will be affected? *[Instruct the student who represents the plant to give his/her string a gentle pull.]* Who feels this pull?

The rabbit and the bee.

2. If plants become scarce, where will the rabbit get its food?

If the rabbit cannot find enough food here then it might have to leave this forest to find food somewhere else.

And what other community member needs the rabbit? *[Instruct the student who represents the rabbit to give his/her string a gentle pull.]* Who feels this pull?

The plant and the fox.

3. If rabbits become scarce, where will the fox get its food?

The fox might need to leave the forest to hunt somewhere else.

[Emphasize the concept that everything is connected to and needs everything else. The students can continue to pull their strings as the questions are being asked. At times, the teacher may need to cue the students regarding what parts of the forest are affected.]

4. What happens if a tree falls or is cut down in the forest? Who will feel a pull? Is the tree anyone's home?

The ant and the bird feel the pull. Both make their homes in trees.

Other than the tree, who else is the bird connected to? (*The worm.*) And who is the worm connected to? (*The soil.*) Who needs healthy soil? (*Plants, flowers, trees, the ant, the rabbit, and the fox do.*) [*These students can all pull their strings.*]

5. What would happen if it didn't rain in the forest for many weeks? What creatures would this affect?

All of the animals, trees, and plants need water, just like we do. [The student who is "water" can pull on his or her string. All the other parts of the forest can pull their strings as well.]

6. What would happen if we drove cars or a school bus near the woods to go on a field trip? Would this be good or bad for the air that the entire forest breathes? [*The student who is "air" can pull his/her string. Point out that this affects all of the forest community and the people too!*]

[The students can return to their seats for discussion of the following questions.]

7. What would happen if our entire classroom took a field trip to this forest and decided to have a picnic?

Answers will vary but may include: we would create a lot of trash, our bus would create exhaust, etc.

If we left our garbage, how would this hurt the forest community?

Answers will vary but may include: animals might try to eat plastic or other things they shouldn't eat and get sick, the trash might get into a stream and pollute the water, etc. This question focuses on human impact on the forest. The greater number of people, the greater the impact.

8. What can we do to protect the forest in the story and all forests?

Answers will vary but may include: put garbage in trash cans, don't pick wildflowers and plants, plant trees, etc. Introduce the concept of stewardship – that people can be protectors of forest communities. The idea is not to discourage kids from visiting the forest, but rather to instill the importance of being respectful and understanding how our actions can affect other living things.

MEASURING LEARNING

For lower elementary, have the students complete the Student Worksheet. Some connections may differ from child to child and that's ok. Be more aware that each character is part of at least one connection and that the connection explanations are accurate.

For upper elementary, use the student-written stories to gauge students' understanding.

FOLLOW-UP ACTIVITIES

1. Students can recreate the web in the form of a collage by mounting their nametags on poster-board and showing connections by either drawing lines and arrows or gluing yarn between the items pictured.
2. Have students create shoebox dioramas of habitats that include all the members of an ecosystem. Students can present their 3-D representation of the ecosystem web and explain how each of the components is connected.
3. Students can make eco-accessories (such as bracelets or key rings) from yarn or string and beads, which symbolize the categories of elements from the story: Yellow = Sun, Green = Plants, Clear/White = Air, Brown = Soil, Blue = Water, Red = People & Animals.

The web of life is a common theme in environmental education. Variations of this activity can be found in *Sharing Nature With Children* by Joseph Cornell, Dawn Publications, 1979.

WEB OF LIFE

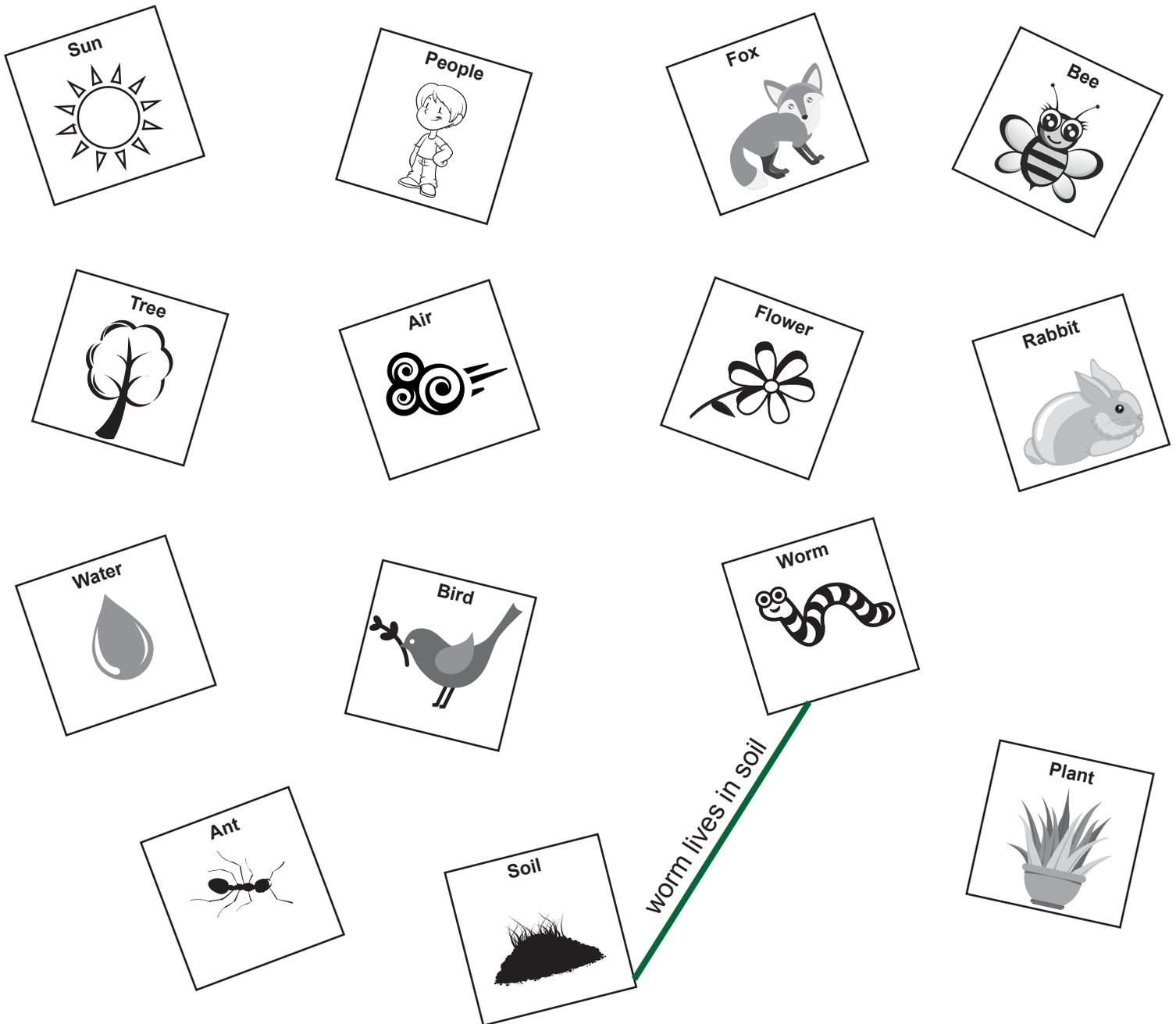
STUDENT WORKSHEET

Name: _____

Date: _____

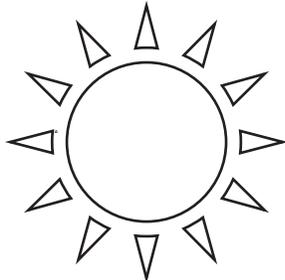
Below are the animals, plants, and other things from the forest. Draw lines between any two that are connected. Draw as many connections as you can but make sure everything has at least one line connecting it to something else.

On each line, write why the two are connected. The first line has been drawn.



CHARACTER CARDS

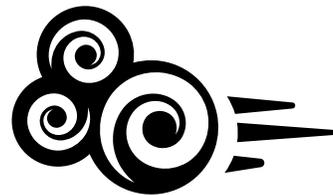
Sun



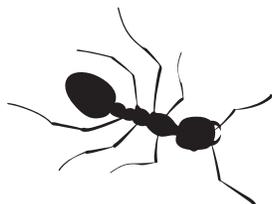
Water



Air



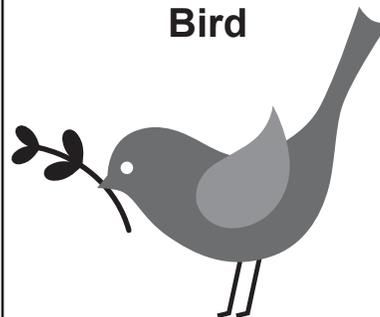
Ant



Tree



Bird



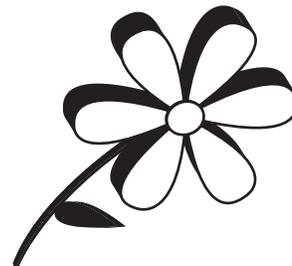
Worm



Soil



Flower



CHARACTER CARDS

Bee



Plant



Rabbit



People



Fox

