



NEXT GENERATION STEWARDS

FIELD STUDY TRIP

OVERVIEW:

The purpose of this Field Study Trip is to explore the connections of a Pacific NW forest ecosystem. Students will observe and discuss the biotic and abiotic elements of a forest ecosystem. They will discuss the natural and human-caused changes they find in the forest, and consider actions they can take to help protect forests. Finally, they will continue recording their observations in a science journal, which they will revisit in a reflective lesson after the Field Study Trip.

NEXT GENERATION SCIENCE STANDARDS:

4-LS1-2

Construct an argument that plants and animals have internal and external structures that function to support survival, growth and reproduction.

5-PS3-1

Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

5-LS1-1

Support an argument that plants get the materials they need for growth chiefly from air and water.

5-LS2-1

Develop a model to describe the movement of matter among plants, animals, and their environment.

SUGGESTED GRADES: 4th - 5th

TIME: 3.5 - 4 hours

LOCATION:

High Point Way Trail Head
on Tiger Mountain
26500 SE 79th St., Issaquah, WA 98027

MATERIALS:

Items brought by the classroom teacher:

- **Next Generation Stewards science journals**

Items Provided by Greenway Trust:

- **Greenway event sign**
- **Solo Walk question cards**
- **Producer, Consumer, Decomposer game**
- **4 backpacks that contain:**
 - Tiger Mountain map
 - Thermometer keychain
 - Plant ID book
 - Animal ID cards set
 - Invasive plant ID sheet
 - Clipboards
 - Pencils
 - Jeweler's loupe(s)
 - Chaperone Sheets (see step #8)
 - Student Guide Sheets (see step #8)

PROCEDURE:

1 WELCOME ON BUS (APPROX. 5 MINUTES)

Meet the group in the parking lot and board the bus. Welcome students, teachers and chaperones to the field study trip and tell them to bring their warm clothes, rain gear, water and lunch. Explain that we will be out on the trail for 3.5 to 4 hours and they will need all the items just mentioned. They will eat lunch on the trail. This is the last chance to use the bathrooms until we return to the bus.

After gathering their gear and using the bathroom, gather as a class in the Interpretive Shelter or at the trailhead. Greenway Educators can use track and scat scarves to teach students while everyone uses the bathroom. Give the Chaperone Guide Sheets out so the chaperones have a few moments to review them. Greenway Educators should organize backpacks before students arrive so that pertinent materials are ready to use.

2 INTRODUCTION (APPROX. 10 MINUTES)

Show a map of the Greenway and talk about what a Greenway is and why it is important. For example:

The Mountains to Sound Greenway Trust is a group of people who work really hard to take care of this landscape that stretches 100 miles from Seattle over the Cascade Mountains to Ellensburg. Our goal is to conserve a healthy balance between the built and natural environments so that we provide places for nature and wildlife, for outdoor recreation and education, for working forests and local agriculture, and for urban areas with strong economies.

Direct the students to page 5 in their science journals. Invite them to find Tiger Mountain on the map of the Greenway.

Thank the chaperones for coming. Briefly explain their role: chaperones will lead a small group of students and help keep the students on task.

Discuss trail etiquette. Ask students if they know some of the “do’s” and “don’ts” of hiking on forest trails. (Some of them may have heard of the Leave No Trace principles). Make sure the following are included: stay on the trail and within sight of your chaperone; respect plants by not stepping on them; respect animals by not disturbing them; respect others by not throwing anything; be safe by not running on trails or by climbing on logs or other structures; respect others and wildlife by not littering or using loud voices.

Announce that today we are continuing to become Next Generation Stewards of the Greenway by studying a forest ecosystem. Remind them that an ecosystem is a collection of biotic and abiotic parts that interact and depend on each other. Ecosystems can be very large or very small and are always changing. The challenge today is to observe the forest ecosystem, figure out connections between the parts, observe the natural and human-caused changes that impact this ecosystem, and think about actions you can take to protect ecosystems.

3 FOREST WALK (45-60 MINUTES)

Students will break into four groups with an adult chaperone(s) in each group. Tell them each group will be separated by about five minutes on the trail. While they wait to start their hike, each student should open their journal to pages 9-10 and begin their abiotic and biotic observations. (Remind them that there is a keychain thermometer on each backpack). They can identify plants in the area, and begin discussing connections between elements of the ecosystem around

them and the roles of producers, consumers, decomposers.

Each group will look at the Tiger Mt. trail map the with Greenway Educator before being launched onto the trail, and will receive the cell phone number of the Greenway Educator in case of emergency. They will walk the trail, looking carefully at the forest using the Forest Exploration Guide. Greenway staff will rotate between groups. Encourage the chaperones to help keep the students focused.

Before launching each group, reiterate the big question for the day and tell students that they are going to observe the forest ecosystem. Send them on the appropriate trail making sure that the students, not adults, are using the materials. Students should have out their journals and pencils, the Student Guide Sheet for their trail, the plant ID book, and the animal ID card set.

The Greenway Educator will do their best to get to each group along the trail, leapfrogging up the trail to the first group. With each group, highlight photosynthesis, abiotic vs. biotic elements, producers, consumers and decomposers, and natural and human impacts on the forest.

4 LUNCH (15-30 MINUTES)

The class should wait for all four groups before starting lunch, so that all students start and end lunch together.

Before or after lunch gather the class into a large circle and ask them to share one observation about the forest ecosystem they just walked through. Ask them what evidence they saw of change in the forest, and if they think that change affects the wildlife who live here.

5 LOOP BIOSOLIDS (APPROX. 5 MINUTES)

There is no waste in nature. For example, bigleaf maple trees take up mineral nutrients from the soil through their roots. They use these nutrients to, among other things, grow their leaves. In the fall, the leaves drop off of the tree and collect on the ground. Decomposers break down the leaves and return those nutrients to the soil. Other plants use those nutrients to grow, and the cycle continues.

You may choose to talk about biosolids during your introduction, before or after lunch, or as a closing idea. There are many opportunities to talk about nutrient cycling, in both the built and natural worlds!

Note: This information is borrowed from resources published by the King County Wastewater Treatment Division.

Loop biosolids are created by the King County Wastewater Treatment Division: they transform the solids (food and poop) of raw wastewater into this natural fertilizer and soil builder. Here is how it works and how it is connected to the Greenway Trust's service-learning stewardship events:

*There was a time when raw sewage, which we call **wastewater**, flowed directly into our oceans, lakes and streams. We didn't realize this was a problem until our lakes and streams became polluted. Fortunately, we came up with a solution to protect the environment and public health. This solution mimics the **nutrient cycling** that happens in nature.*

*When you flush the toilet, wash the dishes, or take a shower, the water travels through underground pipes to the wastewater treatment plant. The water is treated and pumped back into Puget Sound. The solids (food and poop) are sent to huge tanks called **digesters**. There, heat is added; and good bacteria are added to decompose (eat)*

the solids, turning them into something we call **biosolids**. This process in the digesters reduces the odor and kills up to 95% of **pathogens** that were in the raw solids.

After digestion, the biosolids are spun in a **centrifuge** to remove excess water. What we're left with is a semi-solid product rich in nutrients and organic matter that looks somewhat like sparkly, black Jell-O, which is used as **fertilizer** on tree farms in King County and food farms in Eastern Washington.

Some biosolids are mixed with sawdust and composted to make **GroCo**, which is what the Greenway Trust uses to grow our trees and shrubs.

Healthy soil acts like...

- a sponge, soaking up excess rainwater and slowing runoff and erosion.
- a spigot, releasing water to plants as they need it, even when it's not raining.
- a filter, trapping urban pollutants (i.e. oil, metals, and pesticides) as the water percolates through it.
- a supermarket, supplying valuable nutrients to plants to help them grow.

6 GAME (5-20 MINUTES)

If time allows, before starting their drawings on pages 11-12, the class should play an active game that models how energy moves through the ecosystem and/or the roles of producers, consumers and decomposers. Here are a few examples:

- Play charades.
- Play "Owl in the Woods." Place chaperones out in the woods as physical boundaries. One student is the Owl and stands in one place ("on the perch"). The rest of the students are

Mice. The Owl covers his or her eyes and counts down from 20 while the Mice hide in the forest. The Owl "eats" a mouse by saying his or her name and describing their hiding place. Challenge the Mice to move around without being seen by the Owl. To start a new round: call "olly olly oxen free," the Mice all come back to the trail, and you choose a new Owl.

- Stand in a circle. One person starts in the center and represents the sun. They must choose a biotic or abiotic element that they get energy from or give energy to, then choose a classmate to represent that element and switch places with them. This second student is now in the center and must choose a new element and classmate. Continue this way until all students have had a turn in the center of the circle or as time allows.
- Stand in a circle. Ask all students to choose one biotic element of the forest ecosystem. Once everyone has decided, ask them to organize themselves in three groups: producers, consumers, and decomposers. Ask the students if the elements they chose represent a healthy ecosystem. If they do not, they must repeat the activity.
- Energy Transfer Game (see page 25).

7 DRAWING/WRITING (5-20 MINUTES)

Ask the students to stand with their chaperone. Each student should have his or her journal, clipboard and pencil. Direct the students to pages 11-12 in their science journal. Whichever activity you choose to do, be sure to clearly define the boundaries of the space and what you expect the students to accomplish. Give students as much time

as you are able.

Sit Spot *The Sit Spot is an ancient practice of spending time in one spot in nature. Your task is to observe your surroundings with all of your senses (but don't eat anything!). On pages 11-12, draw the forest around you as you see it. Be sure to label your drawing and include arrows that show how the energy moves through this forest ecosystem.*

BioBlitz *Citizen scientists can participate in an annual BioBlitz, hosted by the National Park Service and National Geographic. The goal is to spend 24 hours inventorying as many species of plants, animals, microbes, fungi, and other organisms as possible. Today, we are going to do a mini BioBlitz here in the Tiger Mountain forest ecosystem. Your group will have 15 minutes to identify and write down as many plants, animals and fungi as you can within this circle of rope.*

If there is time, come back together as a whole class and give each group a few minutes to share their observations.

8 SILENT HIKE

Tell the students that they will embark on a silent hike. The purpose of the silent hike is to experience the forest in a new way, focusing on listening, smelling, and looking. The Greenway Educator may have the students hike as a whole group or independently. If you choose the latter, choose a section of trail without any turns. You should be the first one to make the hike. Designate an adult (ideally the teacher) to send one student on the trail every 2 minutes. The designated adult should remind students to hike slowly and silently. There should be a set of thinking questions (on laminated cards) both at the beginning of and end of the silent hike. While students are waiting at either end of the silent hike,

they can identify plants, read about animals, and discuss the thinking questions.

Here are some example questions:

- How many shades of green do you see?
- Have humans been here before? How can you tell?
- Can you spot 3 different insects along your hike?
- What makes this forest healthy?
- Touch a plant nearby. Describe how it feels.
- Listen carefully. What do you hear?
- What is the weather doing now? What do you predict it will be like this evening?

9 WRAP-UP

Back at the trailhead, thank the students, teacher and chaperones for visiting and exploring the forest ecosystem of Tiger Mountain. Tell them there are many other kinds of ecosystems in the Green, and around the world, and we have just explored one tiny bit of a forest ecosystem in the Greenway. Tell them they are welcome to return to this forest ecosystem with their families.

If you haven't already, collect the teacher's Greenway youth waivers and remind them that a Greenway Educator will be visiting their classroom for a Reflection Lesson.

STUDENT AND CHAPERONE GUIDE SHEET INFORMATION

A guide sheet for the Tradition Lake Trail, Bus Trail and Swamp Trail has been developed for both students and chaperones. In this curriculum guide we have only included the Tradition Lake Trail guides so that teachers can develop an idea of what we focus on during the forest walk. Since the forest is always changing, our guides are always changing. So, the sample included in this curriculum might be different from the one actually used during the field trip.



NEXT GENERATION STEWARDS

TRADITION LAKE TRAIL

STUDENT GUIDE SHEET

You are about to embark on a walk on the Around the Lake Trail. As you walk through the forest your job will include being a **careful observer** of the forest and a **participant in the discussion** of the questions listed on this sheet. Your adventure starts now!

As you walk to the bridge, be on the lookout for **MOSS**. Answer the questions:

- Is moss a plant or an animal? How can you tell?
- Where do you see it growing?
- What does moss need to grow?
- Is moss a producer?

Stop 1 The bridge

- Stand on the bridge. What do you see?
- What benefits do streams play in this forest ecosystem?
- Where does the water come from?
- Notice the sides of the streambed. What caused it to be washed away?
- How can erosion change the health of the ecosystem?

As you walk to your next stop, look for **FALLEN TREES and/or NURSE LOGS**

Stop 2 Nurse logs

- Do you see anything growing on them? Why are some called "nurse logs?"
- What purpose do they have in the forest ecosystem?
- Should they be removed from the forest? Why or why not?
- Do you see any fungus (mushrooms)? Are they producers, consumers or decomposers? What do they do for the ecosystem?

Stop 3 The sign that says, "What's Tradition Lake up to?"

- Everyone should be absolutely silent for 1 minute. Look around at the forest. What do you see or hear?
- Now talk as a group and try to identify 10 different parts of the ecosystem. Which parts are biotic or abiotic?
- Take 2 parts and describe how they are connected to each other.

As you walk to the next stop, look for evidence of **ANIMALS** and discuss the questions about animals on the other side of this sheet.

- What animals might live in this forest? Name 5.
- Do you see any? Do you see evidence of any?
- Are animals producers, consumers or decomposers? How do you know?
- Which are predators and which are prey? Can some be both? Name them.
- What do animals need to live?

Stop 4 The balcony (overlooking Tradition Lake)

- Is there evidence of human impact at the balcony? What do you see?
- What caused the trees to fall down? Was it human or natural caused?

As you walk to your next stop, look for **PLANTS**.

- Are plants producers, consumers or decomposers? How do you know?
- How many different kinds of plants do you see?

Stop 5 The intersection of the trails -- Turn right here!!

Using your plant ID book and your invasive plants sheet answer the following:

- What are native plants? Identify 2 native tree species and 2 native plant species.
- What are invasive plants? How did they get here? How do they impact the ecosystem? Do you see any?

As you walk to the next stop notice **THE THREE LAYERS OF THE FOREST**.

#1 Forest Floor – on the ground

#2 Understory – between the forest floor and the tops of the trees.

#3 Canopy – the very top of the trees

- How are they connected to each other?

Stop 6 The Western red cedar tree with huge hole in it - go inside!

- What caused this hole? Can you find evidence to support your idea?
- Was it caused by humans or natural events?
- What caused the little holes above the big hole?

Congratulations! You have completed your ecosystem walk around Tradition Lake. Did you learn anything new? You may now meet your friends at the picnic area beside the lake. Look for large Western red cedar trees and benches to identify this spot. If you get to the Powerline Road you have gone too far!



NEXT GENERATION STEWARDS

TRADITION LAKE TRAIL

CHAPERONE GUIDE SHEET

Walking directions: Follow the Tradition Lake Trail all the way to the cathedral-like area in the forest that has benches and a balcony overlooking the lake. We will all gather here for lunch. If you make a mistake and go on the Bus Trail, turn around and join us at the lunch spot. (Call if you need help!)

Please stop at the following points of interest along the trail with your group. Have the students observe the forest and **discuss the questions** listed at each stop. Focus on identifying parts of this forest ecosystem, how they are dependent on one another and what could change the ecosystem. Between stops you will be asked to look for one specific part of the forest.

Begin walking to the bridge while looking for **MOSS**.

- Is moss a plant or an animal? How can you tell?
- Where do you see it growing?
- What does moss need to grow?
- Is moss a producer?

Chaperone fact sheet: Moss usually grows on trees, logs or rocks. It needs water, air (CO₂), soil and sun to grow. Moss collects and holds water for animals, and provides materials for nests and shelter for insects. Moss is a producer because, like all green plants, it uses photosynthesis to make a simple sugar, called glucose.

Stop 1 The bridge

- Stand on the bridge. What do you see?
- What benefits do streams play in this forest ecosystem?
- Where does the water come from?
- Notice the sides of the streambed. What caused it to be washed away?
- How can erosion change the health of the ecosystem?

Chaperone fact sheet: Streams provide water for animals and plants which is essential for life. The water comes from a spring on Tiger Mountain and from snow and rain. The streambed has been eroded by flooding when warming temperatures melt the snow and by heavy rains. Erosion can cause fish to die if too many small particles of soil accumulate in the stream. This can clog the fish's gills and can suffocate their eggs. People can cause erosion by removing plants and trees from the forest. This can lead to flooding and fish dying.

As you walk to your next stop, look for **FALLEN TREES** and/or **NURSE LOGS**.

Stop 2 Nurse logs

- Do you see anything growing on them? Why are some called “nurse logs?”
- What purpose do they have in the forest ecosystem?
- Should they be removed from the forest? Why or why not?
- Do you see any fungus (mushrooms)? Are they producers, consumers or decomposers? What do they do for the ecosystem?

Chaperone fact sheet: Fallen trees or “nurse” logs usually have moss, plants, small trees and fungus growing on them. Although they are dead, they provide water and nutrients for plants and animals. They “nurse” the living organisms. They are a vital part of the forest and should not be removed from the forest. Foresters used to take them out to reduce fuel for forest fires, but soon found that the impact to the ecosystem was harmful. Fungi are decomposers and feed on dead or decaying matter. This puts nutrients back in the soil.

Stop 3 The sign that says, “What’s Tradition Lake up to?”

- Everyone should be absolutely silent for 1 minute. Look around at the forest. What do you see or hear?
- Now talk as a group and try to identify 10 different parts of the ecosystem. Which parts are biotic or abiotic?
- Take 2 parts and describe how they are connected to each other.

Chaperone fact sheet: **Biotic** parts are the living parts of the forest (plants, animals, fungi) and **abiotic** are the non-living parts (sun, air, water, soil, wind, temperature). Dead things (logs, stumps, fallen leaves, etc.) are also **biotic** because they once were alive. An example of a dependent relationship between two parts would be squirrels need the seeds from trees for food.

As you walk to the next stop, look for evidence of **ANIMALS**.

- What animals might live in this forest? Name 5.
- Do you see any? Do you see evidence of any?
- Are animals producers, consumers or decomposers? How do you know?
- Which are predators and which are prey? Can some be both? Name them.
- What do animals need to live?

Chaperone fact sheet: **Animals in this forest could be black bears, cougars, deer, coyotes, raccoons, squirrels, rabbits, mice, birds, insects, snakes or frogs. Evidence of animals can be tracks, scat, hair, scratching on trees, plant or animal remains left behind.**

Animals are consumers since they can’t make their own food. They either eat plants or each other for energy. Animals also need water, shelter, space and air (oxygen) to survive. All animals depend on plants either by eating them or by eating animals that eat plants.

Cougars, coyotes, bears, insects, birds and snakes are predators. Deer, rabbits, squirrels, mice, birds, insects are prey. Many animals can be both predator and prey.

Stop 4 The balcony (overlooking Tradition Lake)

- Is there evidence of human impact at the balcony? What do you see?
- What caused the trees to fall down? Was it human or natural caused?

Chaperone fact sheet: Logs cut after they fall across the trail, powerlines across the lake, the balcony, the trail and the benches are all examples of human impact in the forest. Trees fall due to windstorms (natural events) and disease (natural). Forests are always changing.

As you walk to your next stop, look for **PLANTS**.

- Are plants producers, consumers or decomposers? How do you know?
- How many different kinds of plants do you see?

Chaperone fact sheet: Plants are producers because they use sunlight, water, air (CO₂) and nutrients to make their own food. Students may see 5 different species of trees, 5 or more different species of bushes, 10 or more different species of plants on the forest floor. You may see Salal flowers (white) or berries (dark blue); Oregon grape flowers (yellow) or berries (dark blue); Salmon berry flowers (pink) or berries (orange).

Stop 5 The intersection of the trails

Using your plant ID books and your invasive plant ID sheets answer the following:

- What are native plants? Identify 2 native tree species and 2 native plant species.
- What are invasive plants? How did they get here? How do they impact the ecosystem? Do you see any?

Chaperone fact sheet: Native plants have lived in the Pacific Northwest for more than 100 years. All the plants (except Foxglove) in the Plant ID books are native. Invasive plants have come here from other places. They can be brought here on purpose or by accident in animal feed, on shoes, or fires, or wind. They change the ecosystem by taking over the habitat of the native plants and using the water, sun and nutrients that they need to grow.

As you walk to the next stop notice **THE THREE LAYERS OF THE FOREST**.

- #1 Forest Floor – on the ground
- #2 Understory – between the forest floor and the tops of the trees
- #3 Canopy – the very top of the trees

- How are they connected to each other?

Chaperone fact sheet: The canopy, the understory and forest floor are connected because the leaves in the canopy capture sunlight and change it into food (carbohydrates) that feed the tree all way down through the understory to the roots. The roots hold the soil together so that plants on the forest floor can grow. Roots also absorb water and nutrients from the soil. The canopy provides shade for the understory and forest floor plants.

Stop 6 The Western red cedar tree with huge hole in it - go inside!

- What caused this hole? Can you find evidence to support your idea?
- Do you think it was human or natural caused?
- What caused the little holes above the big hole?

Chaperone fact sheet: This hole was probably caused by trunk rot and then set on fire by humans. There are dusty areas of the tree that have rotted away and the dark charcoal-like interior was caused by fire. It does not look like a lightning strike (it hits the top of the tree) and there hasn't been a forest fire at Tiger Mountain for over 100 years. The little holes are caused by a sapsucker woodpecker that drills holes and sucks the sap.

Meet the rest of the class in the picnic area beside the lake. Look for large Western red cedar trees and benches to identify this spot. If you get to the Powerline Road you have gone too far!



ENERGY TRANSFER GAME

OBJECTIVES:

- 1) To understand the different roles in an ecosystem (producer, consumer, decomposer).
- 2) To illustrate the transfer of energy and nutrients in an ecosystem.
- 3) To examine the positive and negative effects humans can have on an ecosystem.
- 4) To have fun!

GRADE LEVEL: 4th - 7th

TIME: 30 minutes

LOCATION: Any flat, open space

MATERIALS:

- Energy tokens
- "Compost eggs"
- "Leaves"

INTRODUCTION

Ecosystems depend on energy from the sun. Producers (plants) convert the sun's light energy into chemical energy (glucose) via the process of photosynthesis. Consumers (animals) eat plants (or animals that eat plants) to obtain the energy they need to survive. Decomposers (fungi, bacteria, and invertebrates) obtain their energy from the waste of consumers (and dead producers and

consumers). Decomposers recycle chemical energy into nutrients that are used by producers to grow and eventually reproduce. Nature wastes nothing; we could learn a lot from nature.

OBJECTIVE

Raise your team's Producer from a sprout to a mature tree.

STEPS

1 Divide the students into teams of 3 and ask them to assign each team member a role so that they have one Producer, one Consumer, and one Decomposer.

2 Explain the game to the students: using a relay race format, we will be simulating a simple energy chain where energy starts with the sun, moves through our ecosystem from Producers --> Consumers --> Decomposers and back to Producers. Producers convert light energy into chemical energy (i.e. food) that is eaten first by Consumers then by Decomposers, who recycle the chemical energy as nutrients that are then used by Producers to grow and make more energy.

During the game the Greenway educator will be the Sun, the source of all energy, and a chaperone will be the Compost Bin, where chemical energy is converted into nutrients and compost is made.

3 Explain the boundaries: line up the teams so that Producers are nearest the Sun, Decomposers are nearest the Compost Bin, and Consumers are in between. The Producers start the game by saying "Photosynthesis" to collect 1 energy token from the Sun. At this point, the Consumers can ask their Producer for "energy please," and then bring the energy token to their Decomposer. Once the Decomposer collect 5 energy tokens, they store them in a "compost egg," which they present to the Compost Bin to receive 1 leaf. They then toss/roll/carry the leaf and energy tokens to their Producer.

4 Play the game until a team raises their their Producer to maturity. A tree is mature when it has "x" number of leaves; choose a number based on how much time you have to play.

DEBRIEF QUESTIONS

- 1) Where did all the energy come from?
- 2) What happened to that energy as the game went on?
- 3) Was anything wasted in this system?
- 4) What would happen if we got rid of all the plants? What if we got rid of the decomposers?
- 5) Can someone give me an example of a consumer that lives in our forests? And a decomposer? Could that [consumer] survive without the [decomposer]?
- 6) Wow, so we've learned that organisms in our forest need a special habitat to survive, and they are dependent on other organisms in the ecosystem as well. Now what about humans? Are we part of the ecosystem? Take a minute and think about one way that humans affect the ecosystem. Now share with your neighbor. *If students only mention negative effects, ask them if there are positive ways humans can affect the ecosystem.*

GAME SET-UP



Sun

(the source of energy tokens)

P P P

Producers say "Photosynthesis!" to collect 1 energy token from the Sun. They grow when a Decomposer brings them a leaf.

C C C

Consumers say "Energy please!" to collect 1 energy token from the Producers, which they pass on to the Decomposers.

D D D

Once a Decomposer collects 5 energy tokens, they store them in a compost egg, collect 1 leaf from the Compost Bin, and roll/toss/carry the compost egg and leaf to the Producers.



Compost Bin

(where Decomposers collect Leaves)