

NAME: _____



Activity One



Write a Short Report about a Water Ecosystem

An aquarium is a water ecosystem. It looks like a square box. It is made of glass and filled with water, fish and plants. The aqua- part of the word means water. This is an ecosystem that someone has made. It is closed off from the outside. It has all the plants and animals needed to live.

If you already have an aquarium, you can study it for your report. You could also study a friend's aquarium. If you don't know anyone who has one, you can go to a pet store. They will have many big aquariums. One last thing you could do is go to a big public aquarium. There you will see many big tanks filled with fish and water plants.

See what kind of fish are in the ecosystem. Are there other animals? See what kind of plants there are. This is what you should include in your report:

Name the producers.

Name the consumers.

Tell where the animals get their food.

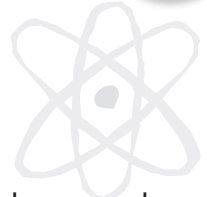
Tell whether the animals eat the plants.

Name any decomposers you see.





Activity Two



How the Sun Gives Energy to Plants

The parts of plants that make food are green. This is where air, water, and sunlight are working together. The green color is something called chlorophyll (CLOR-o-fill). Chlorophyll must be there for a plant to store energy as food. Part of chlorophyll is the mineral magnesium (mag-NEE-zee-um) that the plant gets from the ground.

Besides magnesium, a plant needs air, water, and sunlight. You have probably seen a plant die because it was not watered. We will study what happens to a plant when it doesn't get enough sunlight and air.

Not Enough Sunlight

For this part you need a green lawn and something heavy and flat, like a brick or board. You will also need some black tape with a sticky side.

- Put the heavy flat thing on the lawn.
- Lift the flat thing up every day and see if the grass has changed.
- Cut a small shape out of the tape.
- Stick the tape on a large, green leaf on a tree or other green plant.
- Come back in a week and take the tape off. Notice any changes? If nothing changed, put the tape back and check it again in a week.

What happened to the grass under the flat thing? Why did this happen? What happened to the leaf under the tape? Why did this happen?

Not Enough Air

For this part you need some dirt, a small plant, and a jar with a lid. The jar should be just big enough to put the plant in.

- Put the dirt in the bottom of the jar and plant the plant in it.
- Add plenty of water.
- Put the lid on tight.
- Put the jar in a sunny window or outside.
- Watch the plant every day for changes.

What happened to the plant? Did it have enough sunlight? Did it have enough air? Did it have enough water?



Activity Three



Learn About an Arctic Food Web

The arctic is far in the north where it is very cold. A food web is like a lot of food chains put together. A food web shows as many of the living things in an ecosystem as it can. Arrows point from what is doing the eating to what it eats. The arrows also show which way energy flows.

Read about members of an arctic food web. You can search for “arctic food web” online, or you can look for books in the library. Much arctic life is in the ocean. Other life stays on land. Some animals and birds live both on land and in the ocean.

Here are some of the important animals to look for:

- polar bear
- walrus
- fox
- rabbit (also called hare)
- whales
- seals
- fish
- birds

Try to answer these questions:

- Which are the producers?
- Which are the consumers?
- Which consumers eat plants?
- Which consumers eat other animals?
- Which are the decomposers?
- Where does each animal live?

Make a food web on a large piece of cardboard or paper. Put the names or pictures of the plants and animals on the web. Use arrows to show how energy flows through the food web.



Activity Four

Plant Seed Adaptations



It is good for most plants to spread their seeds. Plants have several ways to do this. In this activity you will collect seeds. You will look for the adaptation that spreads the seeds. Look for seeds that spread in the ways shown below.

Spread by Animals:

You will be the animal. You will use your clothes to collect the kind of seeds that stick to animal fur. Go out and walk through fields with many kinds of plants. Wear the fuzziest pair of pants and the fuzziest socks you have. Seeds will stick to your pants and socks the way they stick to animal fur. When you get home, pick the seeds off of your clothes. Look at them closely. What made them stick?

Spread by Wind:

Look for seeds that are spread by wind. They will be very small seeds with something that helps them fly through the air when it is windy. Look for a tree that has seeds with two wings. These spin as they fly through the air.

Spread by Water:

Some seeds float. They can float for a long time, and the water won't hurt them. Look for plants along a stream. Do the seeds of the plants float? Which plants do you think use water to spread its seeds? Have you seen a coconut? It is a very big seed that can float from one island to another. When it gets to its new island it can sprout and become a coconut tree.

Finally, look at the picture of this seed. It is the seed of a plant called a spiral filaree. The pointy end on the bottom is the seed part. This seed is from a plant that grows in fields of high grass. It is shaped like a screw. This helps it get to the ground and grow. Can you think of how this works? Think about what would happen to the seed if the wind moved the grass around.



a spiral filaree seed

NAME: _____



Activity Five



Life Cycle of a Frog

Frogs live in ponds and even puddles. They live in water that is still. They usually don't live in fast flowing streams. They like to eat bugs. Look for a buggy puddle or a pond. Look for frogs in it. In the spring, frogs lay eggs that float on the water. The picture shows what frog eggs look like.



When you find some eggs, wait for them to hatch. Come back every few days to look. After the eggs hatch, you will see tadpoles in the water. The picture shows what they look like.



Keep coming back to the frog pond. Do you see the tadpoles changing? How are they changing? How can you tell when they have become a grown frog?



Activity Six

Ant Brains



First of all, be careful with ants. Some of them can bite and sting.

Ants have brains and senses. Their brains and senses are more like ours than you might think. In this activity you will watch ants to learn about their brains and senses.

First you will have to find an anthill. It will have a small hole where ants go in and out. It may be at the top of a pile of dirt. Some ants also live under rocks and logs. If you can't find an anthill, find an ant. Follow the ant back to its anthill.

You will see ants in a long line coming and going. They are going to a place they have found food. They bring the food back to the anthill. Try to follow them to the food and back. They mark the trail to the food with smells.

Ants smell with their feelers (antennae). Two feelers come out of the head. Can you see them? Their sense of touch is also in the feelers. Ants also have a sense of sight. They can see, but not as well as we can. They can also hear sounds with their feelers. They use smell and touch to talk to each other. Ants can learn things. They can teach each other. An old ant can teach a young ant how to get to food.



Watch the ants closely. Try to see them talking with their feelers. Watch them following a smell trail. See if you can see one ant teaching something to another ant.

How do ants use their senses differently than we do?