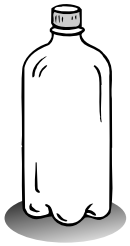
Chapter Science Investigation Name _____

Making an Ecosystem

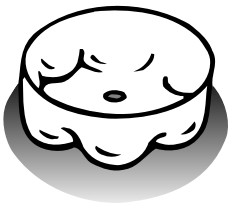
What You Need

gravel

water with no chlorine



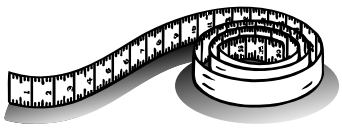
2-L plastic drink bottle



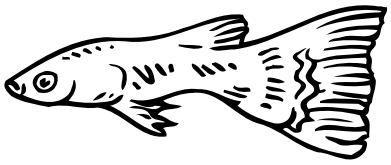
bottom of another bottle (There must be a small hole in it.)

fish food

two small elodea plants



meter tape



small guppy

1 fishnet

Find Out

Do this activity to see how plants and animals get what they need to live and grow from an ecosystem.

Process Skills

Constructing Models
Observing
Communicating

Time

- 40 minutes the first day
- 10 minutes a day for three weeks

What to Do

1. Wash the gravel until the water is clear. Remove the label from the bottle, then put a layer of gravel about 3 cm deep into the bottle. Gently bury the roots of the elodea plants in the gravel. Fill the bottle almost to the top with water.

2. Place the bottle where it will get light, but not direct sunlight.

3. After two days, use the fishnet to put the guppy gently into the bottle. Fit the bottom of the other bottle over the top of your ecosystem, and put one flake of fish food in your ecosystem through the hole in the top. You will need to feed the guppy one flake twice a week.

4. Set up three observation charts, one for each week. **Observe** your model ecosystem each day for three weeks and **record** what you see.

Daily Observations of an Ecosystem	
Week:	**Observations**
Day 1	
Day 2	
Day 3	
Day 4	
Day 5	

Conclusions

1. How did the plants get food?

2. How did the plants help the guppy?

New Questions

1. What other things might also live in your ecosystem?

2. What changes might occur in your ecosystem if you added other living things to it?

Name _____

ACTIVITY

Observing Part of an Ecosystem

What signs of animals did you find?

What did you **observe** when you looked at topsoil with the hand lens?

Draw pictures of the plants and animals you observed.
Classify them as living or nonliving.
Record how many of each plant and animal you saw.

Plants	How Many _____	How Many _____	How Many _____
Animals	How Many _____	How Many _____	How Many _____

Name _____

Conclusions

1. How many different kinds of nonliving things did you have in your ecosystem? What nonliving things did you have the most of?

2. How many different kinds of living things did you have in your ecosystem? What living things did you have the most of?

3. Is anything in your ecosystem eating something else? How can you tell?

Asking New Questions

1. What other things might live in the ecosystem you observed?

2. Could you live in this ecosystem? Could a polar bear? Why?

Name _____

ACTIVITY

Making a Food Chain

Think of a food chain. What plant is in the food chain? Which animals are in the food chain? In the chart, **draw** or **write** the names of the plant and animals in the food chain.

Food Chain

Plant	**Animal**	**Animal**	**Animal**

Why did you choose the plant and animals in your food chain?

Name _____

Conclusions

1. Why did you have to use the names of both plants and animals for your food chain model?

2. What different names did your classmates choose for their models?

3. Would your food chain model still be a "chain" if you had used plant names only?

Asking New Questions

1. What would happen to your model if you removed one of the middle links from the chain?

2. In a real food chain, what happens to the consumers if all the producers disappear?

Name _____

ACTIVITY

Watching Worms

How did the worm move on the waxed paper the first time? The second time?

Draw a picture of the worm. Show the wiry hairs you saw with the hand lens.

How did the worm move on the soil the first time? The second time?

Name _____

Conclusions

1. Over which surface does the worm move better?

2. What adaptation helps an earthworm move over surfaces?

3. Were your observations the same the second time you made them?

Asking New Questions

1. Do you think the earthworm behaved the same in the box with soil as it would in its natural habitat?

2. How are an earthworm's wiry hairs like the fins of a fish?