

8/1/2012



Assessing with
Learning
Progressions in
Science

STC ECOSYSTEMS

Photo by Thirza Zagelow

Instructional Tools | Contributors: Robert (Rocky) Diaz, Thirza Zagelow



**Northwest Educational
Service District 189**
Together We Can

Funding information:
Mathematics & Science Partnership under Title II, Part B
Program Code: 62
CFDA 84.366B

Instructional Tools

In this packet you will find a set of instructional supports for science materials. These documents represent the work-in-progress of teachers in the Assessing with Learning Progressions in Science Project, a Math Science Partnership through the Northwest Educational Service District in Washington State. While we encourage others to use the materials, please know the power of these tools lies in the collaborative discussion and analysis that occurs during their creation. We strongly suggest that anyone utilizing these tools make them your own, adjusting them to fit your teaching context and district priorities. Professional development tools to aid you in this process are available on the ALPS project web page www.nwesd.org/nwalps. For access to editable versions of these documents please contact Nancy Menard nmenard@nwesd.org.

Overview of the Tools (not every unit tool-set will include all of these tools)

Unit Overview

The unit overview grid lays out learning targets or important scientific ideas from Washington State Standards for each investigation in the module and clarifies the success criteria for each learning target. It also details the formative assessments that have been designed to assess each target in the investigation.

Learning Progressions

A learning progression is a graphical representation of the path students take toward mastery of a science “big idea”. The ALPS *Learning Progression* documents include a description of an important big idea from the *Washington State Science Learning Standards* and the progression of building-block learning targets that students master on their way toward an understanding of that big idea. For each building-block learning target the student success criteria is identified and one or more formative assessment tasks to elicit evidence of student understanding are suggested.

Formative Assessment Tasks

The suggested formative assessment tasks are examples of tools used by the teachers in the ALPS project to gather evidence of student understanding. The *Assessment Task Cover Sheet* details each assessment and gives administration tips and suggestions for instructional adjustments based on some of the common student struggles they encountered.

Student Work Samples

Selected student work samples from students in ALPS classrooms give a picture of the range of student responses gathered from sample formative assessments. The *Student Work Sample Cover Sheet* describes the student work samples and the teacher’s interpretation of student understanding.

ES Unit Overview

Lesson	Learning Targets & Success Criteria	Assessment
Lesson 2,6	<p style="text-align: center;">Plants and animal have inputs and outputs. Changes in environment may cause plants and animals to respond to their environment.</p> <ul style="list-style-type: none"> 🎯 Non-living factors that affect growth and reproduction of organisms in an ecosystem include light, water, temperature, and soil ✓ I can describe how light, water, temperature, and soil affect growth and reproduction. 	<p>Observe and draw how the terrarium changes over time. Include details on how light, water, temperature and soil affect growth and reproduction. Use multi-day observation form along with student reflection.</p>
Lesson 3	<ul style="list-style-type: none"> 🎯 Input/output. ✓ I can identify inputs and outputs in a system. 	<p>A) Observe the aquarium over several days and record your observations in your science notebook. B) With your aquarium partners answer the questions on the input/output form and report to the class your answers to the questions.</p>
Lesson 4	<ul style="list-style-type: none"> 🎯 Organisms can be categorized by the functions they serve in an ecosystem: producers or consumers. ✓ I can identify producers and consumers. ✓ I can show the flow of energy for producers and consumers in a food chain. ✓ I can explain my food chain. 	<p>Exit ticket: A) Draw a simple food chain with at least three living organisms. Draw arrows properly showing the flow of energy and identify and label the producers and consumers. B) Explain in writing how your food chain functions. Use: The Food Chain/Web form.</p>

Lesson 5,6		<ul style="list-style-type: none"> 🎯 Plants and animals depend on one another and on the non-living resources in their ecosystem. ✓ I can identify living and non-living components of an ecosystem. ✓ I can identify connections between living and non-living components of an ecosystem. 	<p>A) Fill out the aquarium/terrarium web with your group partners. Draw an arrow from the non-living things to the living things that are dependent on them. Be prepared to defend your choices.</p> <p>B) Write a paragraph or two on this question in your journal.</p>
Lesson 7	<p style="text-align: center;">Ecosystems can be affected by change. Stability can be impacted by human events. Pollutants can affect the populations that can be supported in a food web.</p>	<ul style="list-style-type: none"> 🎯 All plants and animals change the ecosystem where they live. If this change reduces another organism's access to resources, that organism may move or die. ✓ I can describe how one organism could change the balance of the ecosystem. 	<p>Answer this question in one or two paragraphs. What would happen to your ecosystem if all the plants in it died? Include two or more details to support your conclusion.</p> <p>Use Interdependent relationships form.</p>
Lessons 8-13		<ul style="list-style-type: none"> 🎯 A pollutant is anything that can harm living organisms. Pollutants can affect the stability of an ecosystem. ✓ I can observe and record the effects of pollutants in the ecosystem. 	<p>A) Use data collection form (11A) to record the results of introducing different pollutants into the ecosystems or record in science journal.</p> <p>B) Present a group report that briefly discusses the experimental results.</p>
Lesson 14-15		<ul style="list-style-type: none"> 🎯 People affect ecosystems both positively and negatively. ✓ I can give examples of how people affect an ecosystem both positively and negatively. 	<p>Reflective Writing: How People Affect Ecosystems People can affect ecosystems in good (positive) or bad (negative) ways. Give examples of helpful and harmful behavior and then explain how that behavior can help or hurt an ecosystem.</p>

Assessing with Learning Progressions in Science

Funding information:

Learning Progression

Ecosystems Food Webs

Prerequisite skill:
Distinguish between living and non-living things
Definition of an ecosystem
Identify the differences between plants and animals

Learning Target 1:
Non-living factors that affect growth and reproduction of organisms in an ecosystem include light, water, temperature, and soil.

Lesson 2,6
4-5 LS 1C 1D

Success Criteria:

I can describe how light, water, temperature, and soil affect growth and reproduction.

Formative Assessment:

Observe and draw how the terrarium changes over time. Include details on how light, water, temperature and soil affect growth and reproduction.
Use multi-day observation form along with student reflection.

Learning Target 2:
Input/output.
Lesson 3
4-5 LS 1C 1D 2B
Page 25 TM
Background

Success Criteria:

I can identify inputs and outputs in a system.

Formative Assessment:

A) Observe the aquarium over several days and record your observations in your science notebook.
B) With your aquarium partners answer the questions on the **input/output** form and report to the class your answers to the questions.

Learning Target 3:
Organisms can be categorized by the functions they serve in an ecosystem: producers or consumers.

Lesson 4

4-5 LS 2B 2C

Success Criteria:

I can identify producers and consumers.
I can show the flow of energy for producers and consumers in a food chain.
I can explain my food chain.

Formative Assessment:

Exit ticket:
A) Draw a simple food chain with at least three living organisms. Draw arrows properly showing the flow of energy and identify and label the producers and consumers.
B) Explain in writing how your food chain functions.
Use: The Food Chain/Web form.

Learning Target 4:
Plants and animals depend on one another and on the non-living resources in their ecosystem.

Lesson 5,6

4-5 LS 2A LS 2D

Success Criteria:

I can identify living and non-living components of an ecosystem.
I can identify connections between living and non-living components of an ecosystem.

Formative Assessment:

A) Fill out the **aquarium/terrarium web** with your group partners.
Draw an arrow from the non-living things to the living things that are dependent on them. Be prepared to defend your choices.
B) Write a paragraph or two on this question in your science journal.

Big Idea:
Plants and animal have **inputs and outputs.**
Changes in environment may cause plants and animals to respond to their environment.
4-5 LS 1C 1D 2B 2C

Later big ideas that build on this big idea include:

The output of one system can become the input of another system.

ECOSYSTEMS

Big Idea: **Plants and animal have inputs and outputs. Changes in environment may cause plants and animals to respond to their environment.** 4-5 LS 1C 1D 2B 2C

Formative Assessment Task Cover Sheet

Learning Target ! Food Web Assessment Task Letter

Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: Observe and draw how the terrarium changes over time. Include details on how light, water, temperature and soil affect growth and reproduction. Use multi-day observation form along with student reflection.</p>	<p>Administration Tips: This task begins as soon as the terrariums are planted and should be observed for several weeks. If this is done in the winter grow lights will greatly speed up the growth of the plants.</p>
<p>Learning Target: Non-living factors that affect growth and reproduction of organisms in an ecosystem include light, water, temperature, and soil. Lesson 2,6 4-5 LS 1C 1D</p>	
<p>Success Criteria I can describe how light, water, temperature, and soil affect growth and reproduction.</p>	
<p>Student Task Sheet Included: yes Student Work Samples Included: yes</p>	

Funding information:

ECOSYSTEMS

Big Idea: **Plants and animal have inputs and outputs. Changes in environment may cause plants and animals to respond to their environment.** 4-5 LS 1C 1D 2B 2C

Learning Target 2 Food Web Assessment Task Letter	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: A) Observe the aquarium over several days and record your observations in your science notebook.</p> <p>B) With your aquarium partners answer the questions on the input/output form and report to the class your answers to the questions.</p>	<p>Administration Tips: Observations will be recorded before the input/output sheet is used. Can be used as a group recording sheet or individually after group discussion</p>
<p>Learning Target Input/output.</p> <p>Lesson 3 4-5 LS 1C 1D 2B Page 25 TM Background</p>	
<p>Success Criteria I can identify inputs and outputs in a system.</p>	
<p>Student Task Sheet Included: yes Student Work Samples Included: yes</p>	

Funding information:

ECOSYSTEMS

Big Idea: **Plants and animal have inputs and outputs. Changes in environment may cause plants and animals to respond to their environment.** 4-5 LS 1C 1D 2B 2C

Learning Target 3 Food Web Assessment Task Letter	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: Exit ticket: A) Draw a simple food chain with at least three living organisms. Draw arrows properly showing the flow of energy and identify and label the producers and consumers. B) Explain in writing how your food chain functions. Use: The Food Chain/Web form.</p>	<p>Administration Tips: Practicing this concept in large and small group settings before giving the formative assessment A is beneficial. Use of white boards is recommended before paper pencil activity.</p> <p>Suggestions for Instructional Adjustments: I looked for additional resources as the kit did not address this important concept in depth. I used a video and book on food chains. <i>The Magic School Bus: A Science Chapter Book # 17 Food Chain Frenzy</i> Publisher: Scholastic</p>
<p>Learning Target: Organisms can be categorized by the functions they serve in an ecosystem: producers or consumers. Lesson 4 4-5 LS 2B 2C</p>	
<p>Success Criteria: A) I can identify producers and consumers. I can show the flow of energy for producers and consumers in a food chain. I can explain my food chain.</p>	
<p>Student Task Sheet Included: yes Student Work Samples Included: yes</p>	

Funding information:

ECOSYSTEMS

Big Idea: **Plants and animal have inputs and outputs. Changes in environment may cause plants and animals to respond to their environment.** 4-5 LS 1C 1D 2B 2C

Learning Target 4 Food Web, Assessment Task Letter	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: A) Fill out the aquarium/terrarium web with your group partners. Draw an arrow from the non-living things to the living things that are dependent on them. Be prepared to defend your choices. B) Write a paragraph or two on this question in your journal.</p>	<p>Administration Tips: Web can be used at anytime. Interdependent form should be used at the end of lesson 7</p>
<p>Learning Target: Plants and animals depend on one another and on the non-living resources in their ecosystem. Lesson 5,6 4-5 LS 2A LS 2D</p>	
<p>Success Criteria: I can identify living and non-living components of an ecosystem. I can identify connections between living and non-living components of an ecosystem.</p>	
<p>Student Task Sheet Included: yes Student Work Samples Included: no</p>	

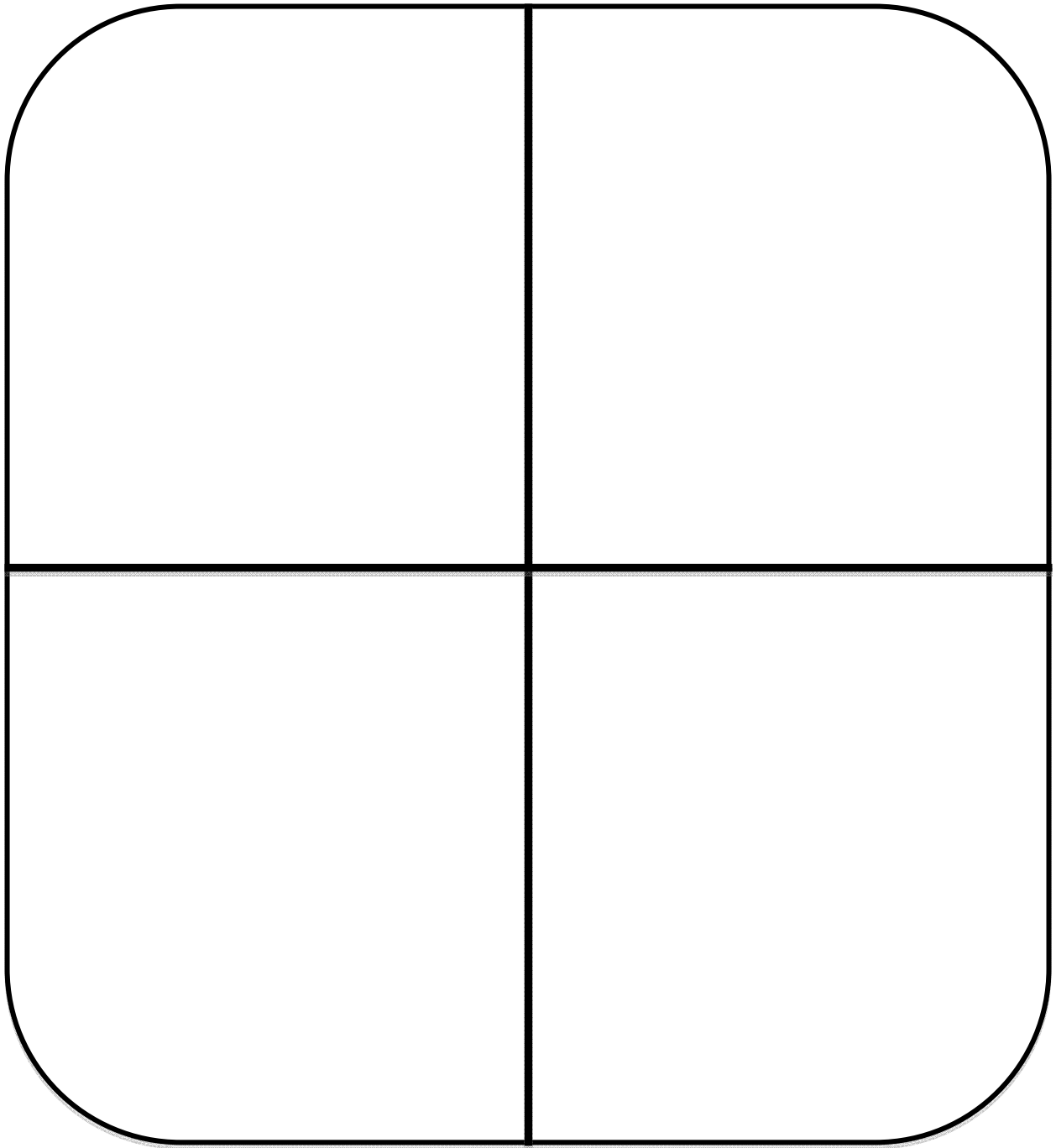
Funding information:

Name _____

Date _____

The Terrarium

Draw and label how your terrarium looks from above.

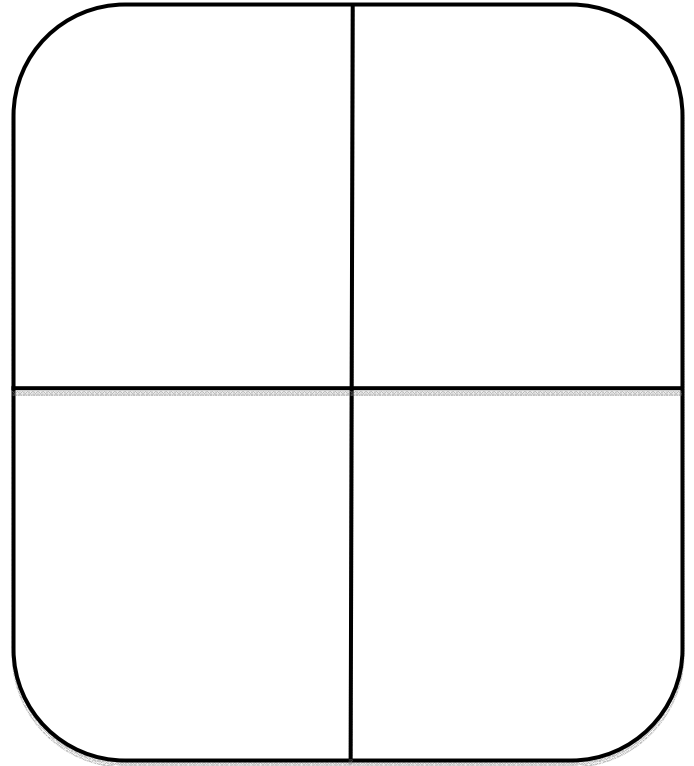
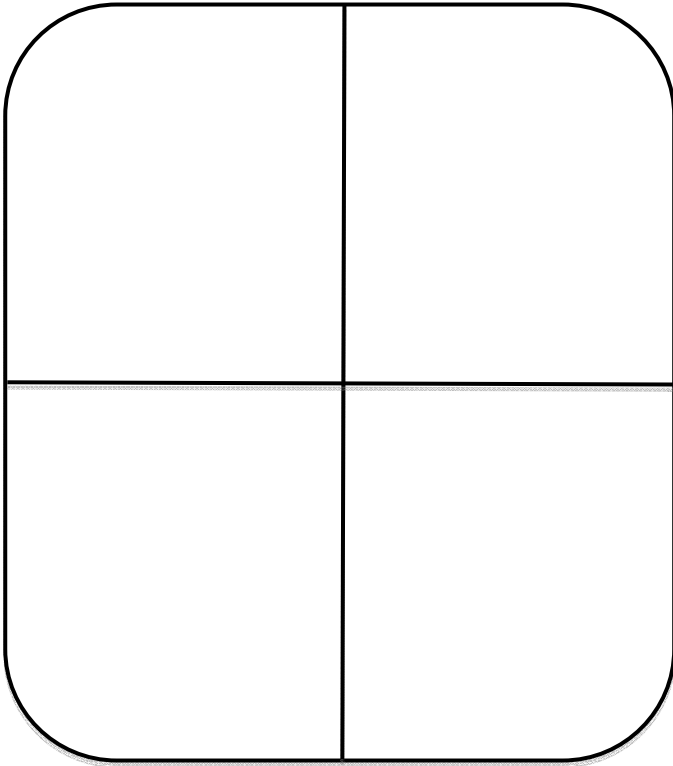


Name _____

Draw and label how your terrarium looks from above.

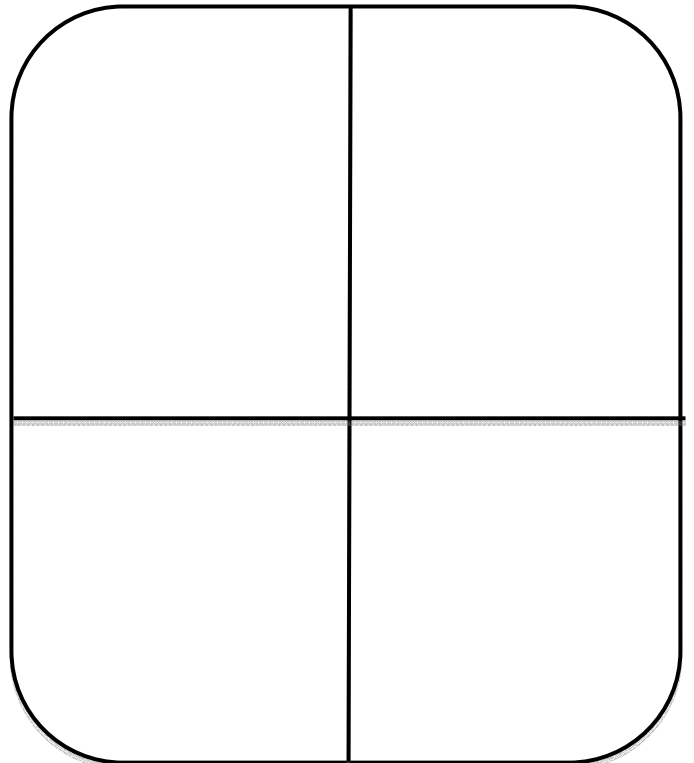
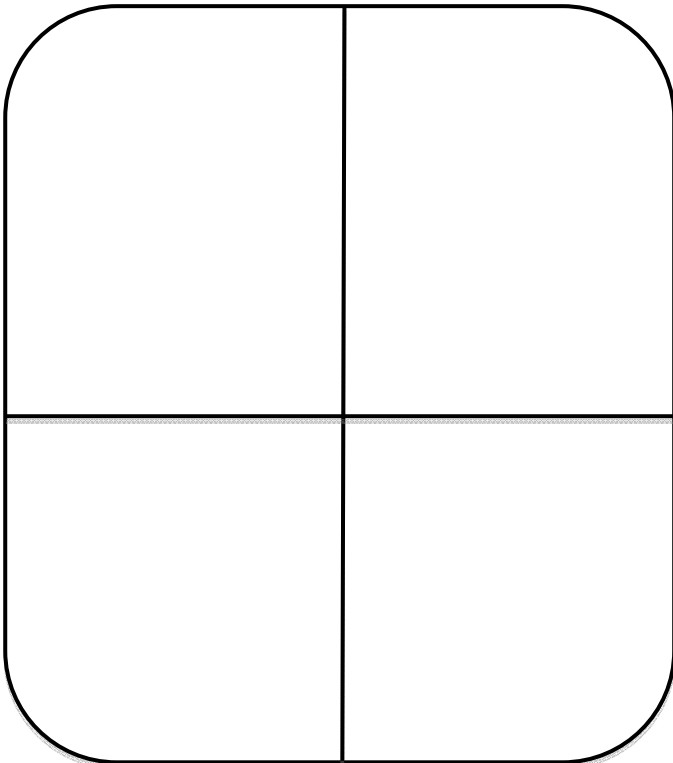
Date _____

Date _____



Date _____

Date _____

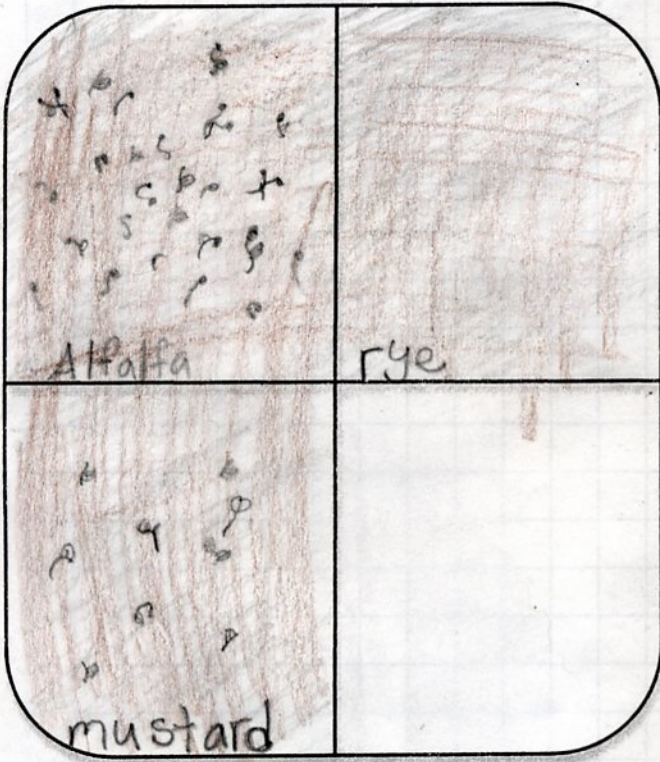


Draw and label how your terrarium looks from above.

blue

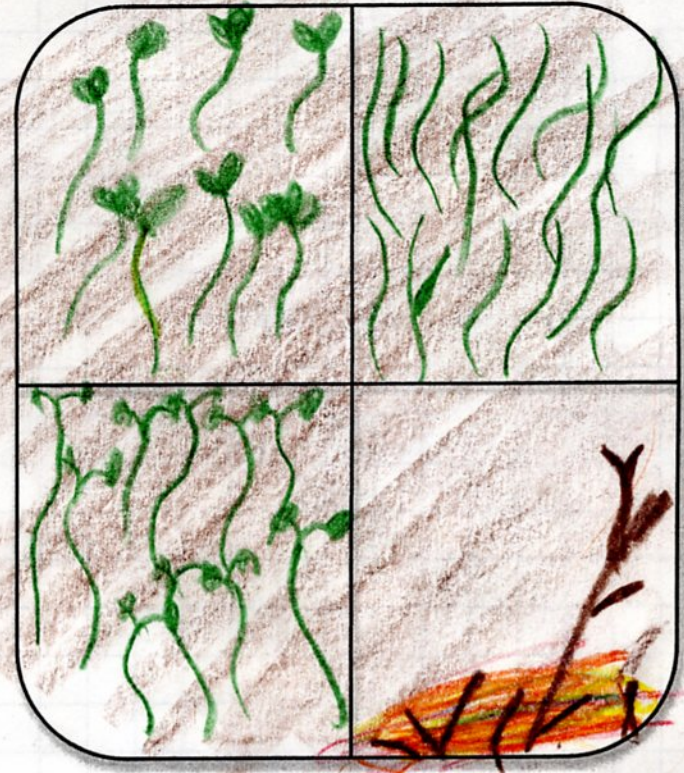
Date 1/12/12

Date _____



Date _____

Date _____



1/12

There are 26 alfalfa sprouts.

There are 9 rye sprouts.

There are 12 Mustard sprouts.

We have two sticks and a few bits of leaf. Our icapods came today but there not in our turanians yet.

1/23 The plants are an inch or two tall. We think it is because we watered them and put a light over top and now it looks so cool. Last week it snowed so that is why they look so big all of a sudden.

I think the grow light and the water are making the plants grow a lot because I can't even tell how many there are! for some reason the moss that we got is still green.

1/30 The rye is 4 and a half inch tall! The mustard and the alfalfa are growing new leaves that are different from there first leaves. The Mustard is two inches tall. The alfalfa is two inches like the mustard.

Today I see 9 mustard sprouts and 29 Alfalfa sprouts and 0 rye sprouts.

Today I saw 40 mustard sprouts and last time I saw 9 mustard sprouts. Then we have 36 rye sprouts and last time we had 0 Rye sprouts and now to the alfalfa we have 30 alfalfa sprouts. Today we have had lots of changes because before we had a small number of sprouts and now we have a big number of sprouts.

Today we put 5 drops in each plant and today I don't see any changes from the plants but I think the rye got bigger.

Today I see 1 mustard in the alfalfa and the rye is really tall now it is taller than the tub and the mustard has lots of big leaves and there is 48 alfalfa and there are 37 mustards. Then there is 26 rye. Then the rye is a little bit thick and the alfalfa has some tall ones and some small one that has seeds on the top of the plant.

What I Observed

#1. I saw 2 sprouting seeds, one was from the mustard and the other from the rye. I also saw little bugs in the dead stuff. #2. We dropped 8 drops of water from a dropper into 3 of the spaces. #3. A little later we put the plants under a light we also sometime will get crickets and other bugs and animals.

#1. I saw at least 15 mustard plants, 10 alfalfa and 10 rye sprouts. #2. We had a whole snow week off and Mrs. Zagelow had to water the plants during that time. #3. I can see more sprouts coming soon to our groups tub and the pill bugs are doing quite good.

#1. I saw more plants have grown in our tub. #2. I see roots growing on the side of the walls to. #3. We dropped 5 droppers full of water on the plants to water them. #4. We got the fish, snails, algae and duckweed for our class today we also have 30 isopods 30 of the fish and 30 snails.

#1. I can now see we have seed pods on our alfalfa which is growing more tall at least one half of a cm. #2. I see are Mustard is growing its main leaf and has grown $\frac{1}{2}$ a cm. also its getting thicker. #3. Our Rye ^{has} $\frac{1}{16}$ grown $1\frac{3}{4}$ a half cm. I can see long roots growing on the side of the tub to and to keep our plants alive Mrs. Zagelow waters them on the weekends.

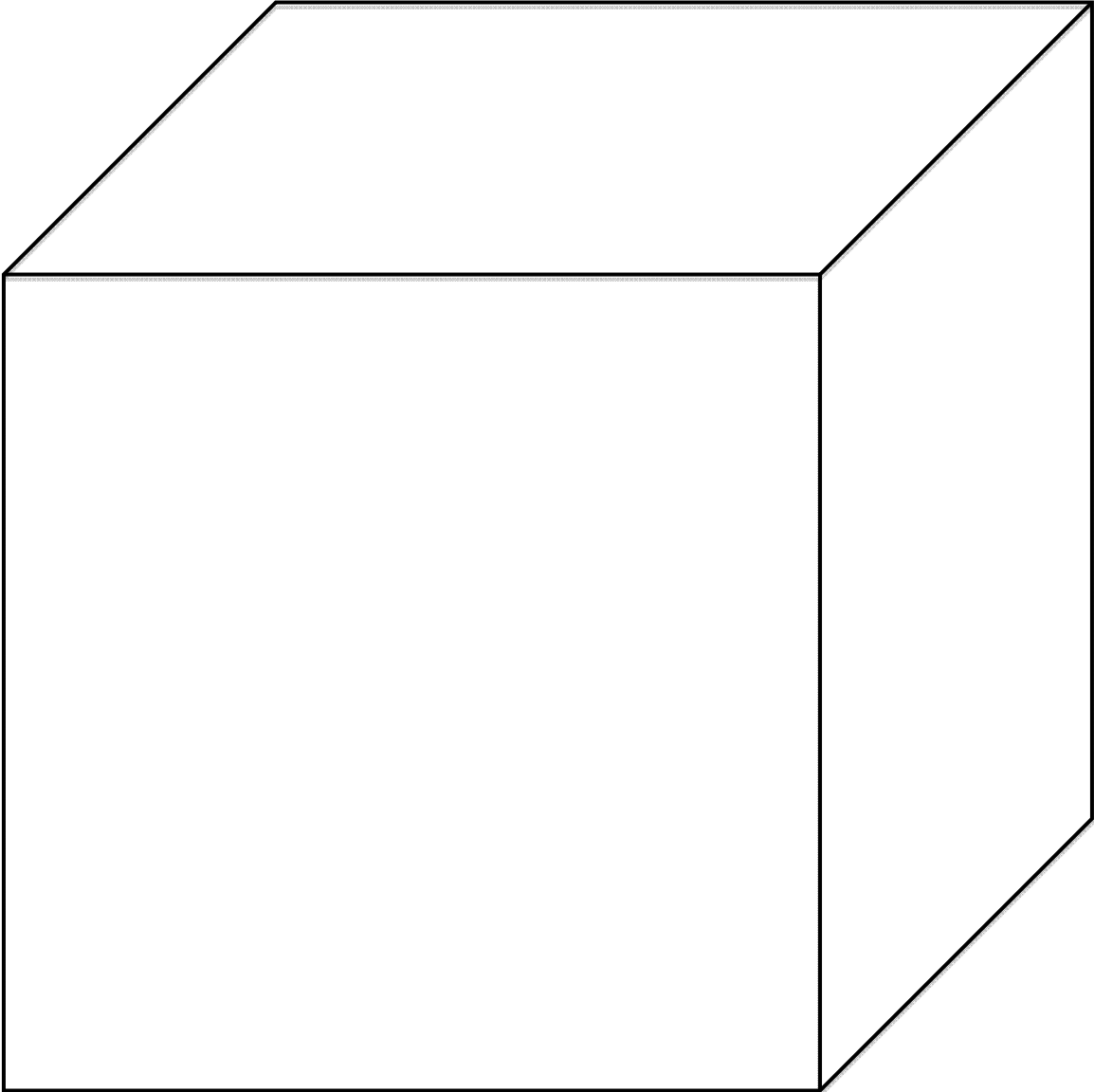
Aquatic animal observations and discussion:

1. How are my fish similar? How are they different?
2. How are my snails similar? How are they different?
3. How are the fish and snails similar or different in how they look?
4. How are the fish and snails alike or different in the way they move?
5. How do you think each of these characteristics helps the organism interact with its environment?
6. How does each animal contribute to the environment?

Name _____ Date _____

The Aquarium

Draw and label how your aquarium looks from the side.



Inputs/Outputs in the Aquarium

Group Number _____

Members _____

Observe and record information in your science notebooks about the organisms in the aquaria over several days.

What are the needs of the organisms in the aquatic environment?

What roles do the elodea, duckweed and algae play in maintaining the ecosystem?

What roles do the fish and snails play in maintaining the ecosystem?

1/30/12

What do aquatic organism need?

They need food, water to breathe, oxygen to be alive. ~~SN~~ want to grow their food. All those animals ~~and~~ need those things to survive. If we didn't have clean water they will die or get sick.

Feb 2

Mosquito fish were not hardy the snails were really happy. Snails are really interesting to learn about their speed is slow if they layed egg it would look really gooey the baby snail and mother snail are alive for a long time. The fish we started next day we had half of fish then 6 fish were left then they all died then we got more mosquito fish and then the some died. The mosquito fish eat the duckweed the snails eat dead stuff and I saw a snails eat a dead fish that is why fish and snails are really really interesting. Then we got cloud fish they are big fish they eat duckweed they can fight with one mosquito fish.

What do aquatic organisms need?

- Aquatic organisms need sun because it will keep them warm.
- Aquatic organisms need oxygen and carbon dioxide to live.
- Aquatic organisms need clean water to live.
- Aquatic organisms need light to live.
- Aquatic organisms need food to live.

2-2-12 ^{mosquito}
Our fish arrived last thursday and we had half of them die over night on friday and on monday ^{about} we found 6 mosquito fish left and some snails died. We got new fish called white cloud fish also called guppies. They are still alive. The snails have eaten some of the elodea. The snails have a foot that has 2 tentacles that have an eye on the end of each one. They also have a mouth on the bottom side of the foot. In mouth they have a tongue called a radula. They do not have ears. They have poor eye sight they can probably only tell if it is light or dark. The fish are black red a li

Members

Nico, Joseph, EMMH, Gino, Jochan, Thalia

Observe and record information in your science notebooks about the organisms in the aquaria over several days.

What are the needs of the organisms in the aquatic environment?

- Oxygen
- food
- Protection
- Water
- CO₂
- Sun/heat

What roles do the elodea, duckweed and algae play in maintaining the ecosystem?

- They produce oxygen for fish and snails.
- algae is food for the snails.
- Duckweed is food for fish and snails.
- The elodea is protection for the fish.
- Fish and snails eat the duckweed.

What roles do the fish and snails play in maintaining the ecosystem?

- The snails clean the tank for the fish.
- The fish eat duckweed to keep light in the tank.
- The snails eat duckweed so it doesn't block off the oxygen.
- The fish are food for the snails when they die.
- When the fish poop the snails eat it for the nutrients and it cleans the tank.

Members Malia, Kelsie, Tamara, Snizhang, and Logan E.

Observe and record information in your science notebooks about the organisms in the aquaria over several days.

What are the needs of the organisms in the aquatic environment?

- They need water.
- They need heat/sun.
- They need plants for oxygen.
- w/food organisms depend on each other.
- Shelter

What roles do the elodea, duckweed and algae play in maintaining the ecosystem?

- The elodea is protection for fish and snails
- duckweed food and shade for the fish and snails
- Algae is food for the snails.
- They

What roles do the fish and snails play in maintaining the ecosystem?

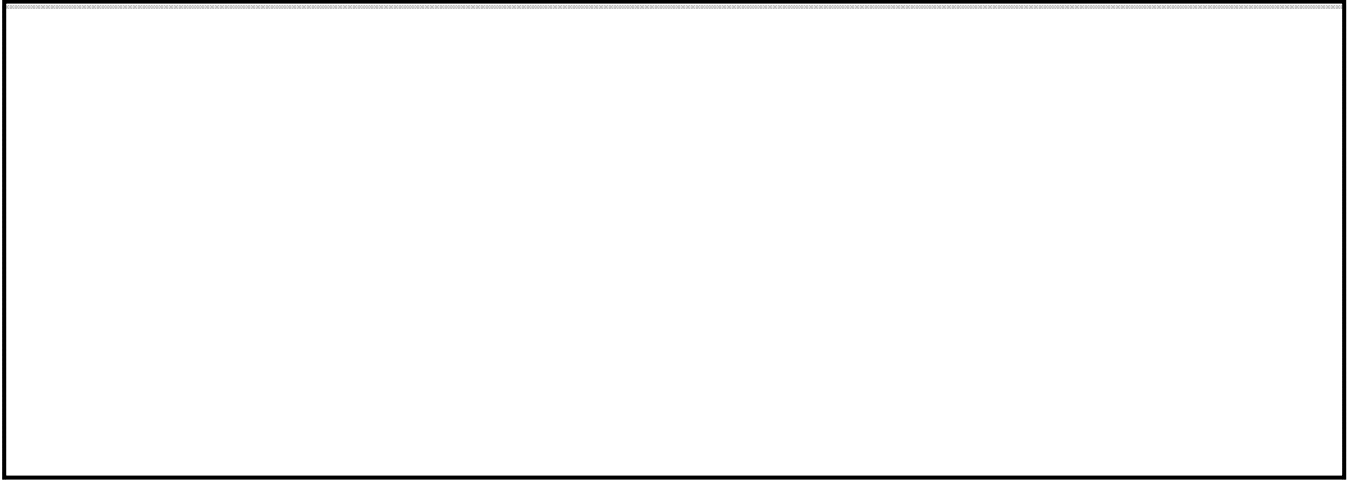
- Snails clean the aquarium so the algae doesn't over grow.
- The fish control the duckweed and algae because the fish eats it.

The Food Chain/Web

Name _____

Date _____

Draw a food chain/web. Label the producers and the consumers. Show the flow of energy using arrows.



Explain your food chain/web.

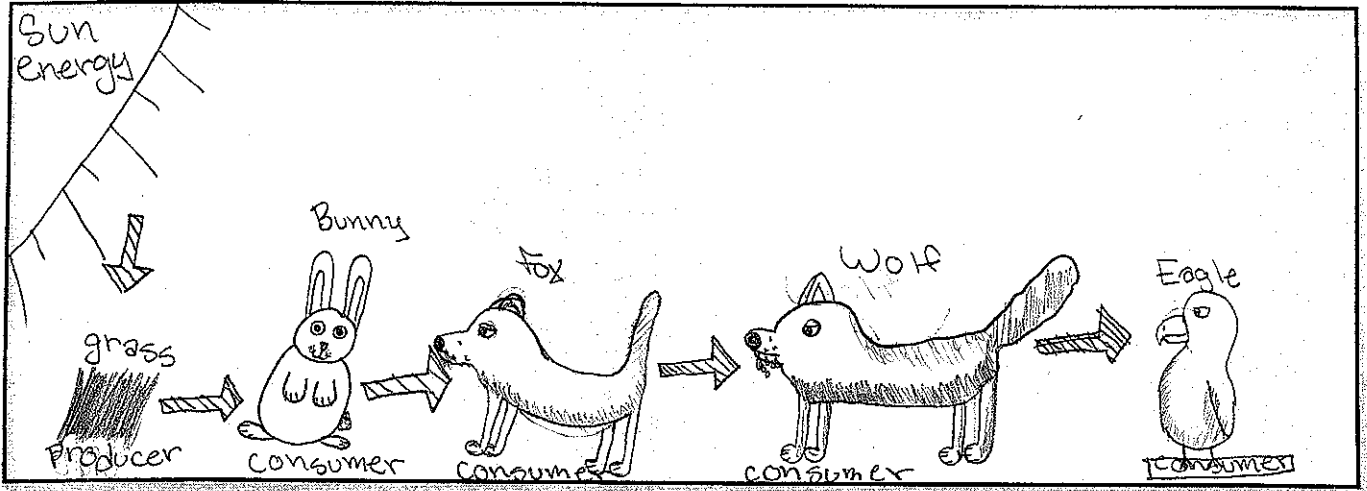
Be sure to use these words in your writing:
consumer, energy, producer

The Food Chain/Web

Name _____

Date _____

Draw a food chain/web. Label the producers and the consumers. Show the flow of energy using arrows.



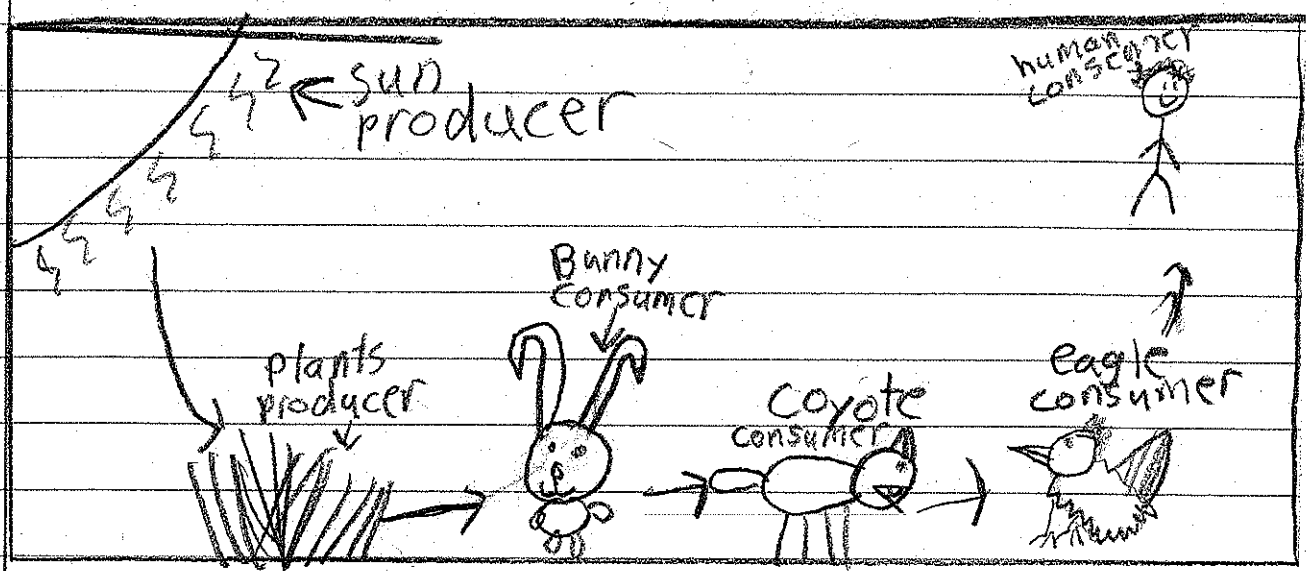
Explain your food chain/web.

Be sure to use these words in your writing:
consumer, energy, producer

The Sun gives energy to the plants, the bunny eats the grass, the fox eats the bunny, the wolf eats the fox, and the eagle attacks the wolf and he eats him/her.

food chain/web

3/1/12



Food chain/web

All food chains/webs start with the sun, because it provides energy for the plants to grow. The sun is a producer because of that. Plants are also producers because animals eat them, that provides energy. A bunny will eat the grass and will get eaten by a coyote. But the bunny is still a consumer because it's already eaten the grass. The coyote is a consumer because it ate the bunny. Then a eagle drops in and eats the coyote. The eagle is a consumer because it ate the coyote. But the coyote is still a consumer because it ate the Bunny. Then us humans eat the eagle, and we

are consumers because we eat the eagle, (and everything else on the food chain). We don't get eaten while we are alive but when we die we are eaten by bacteria. But we are still consumers because we ate off the food chain already.

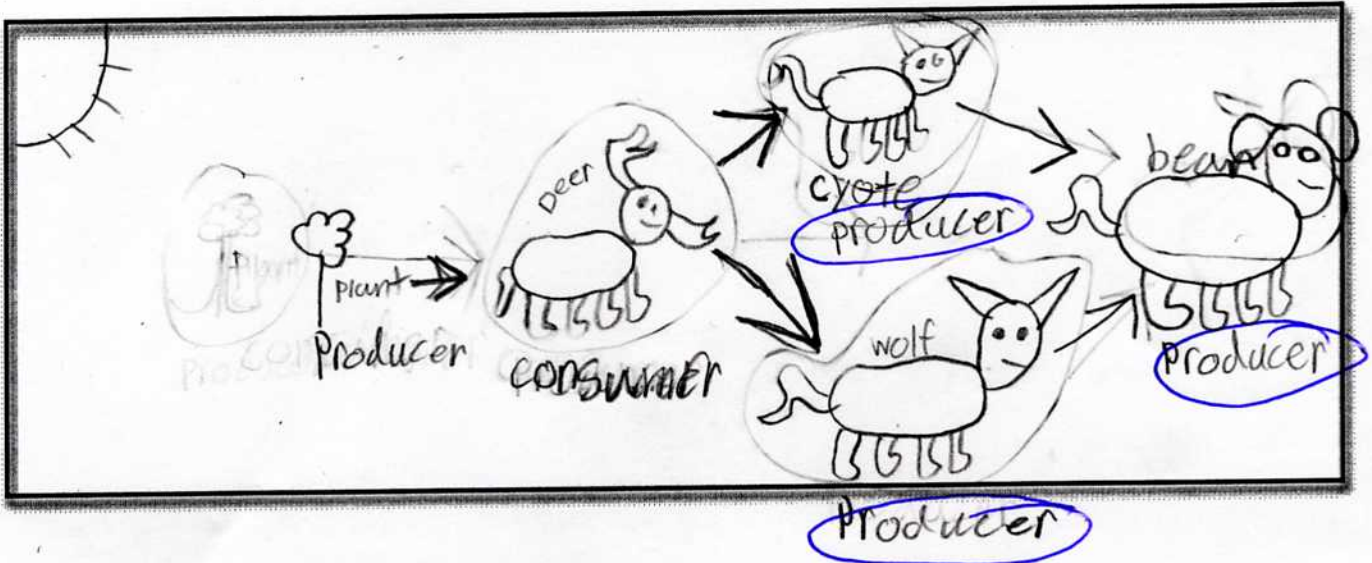
The Food Chain/Web

2

Name Santana Ford

Date _____

Draw a food chain/web. Label the producers and the consumers. Show the flow of energy using arrows.

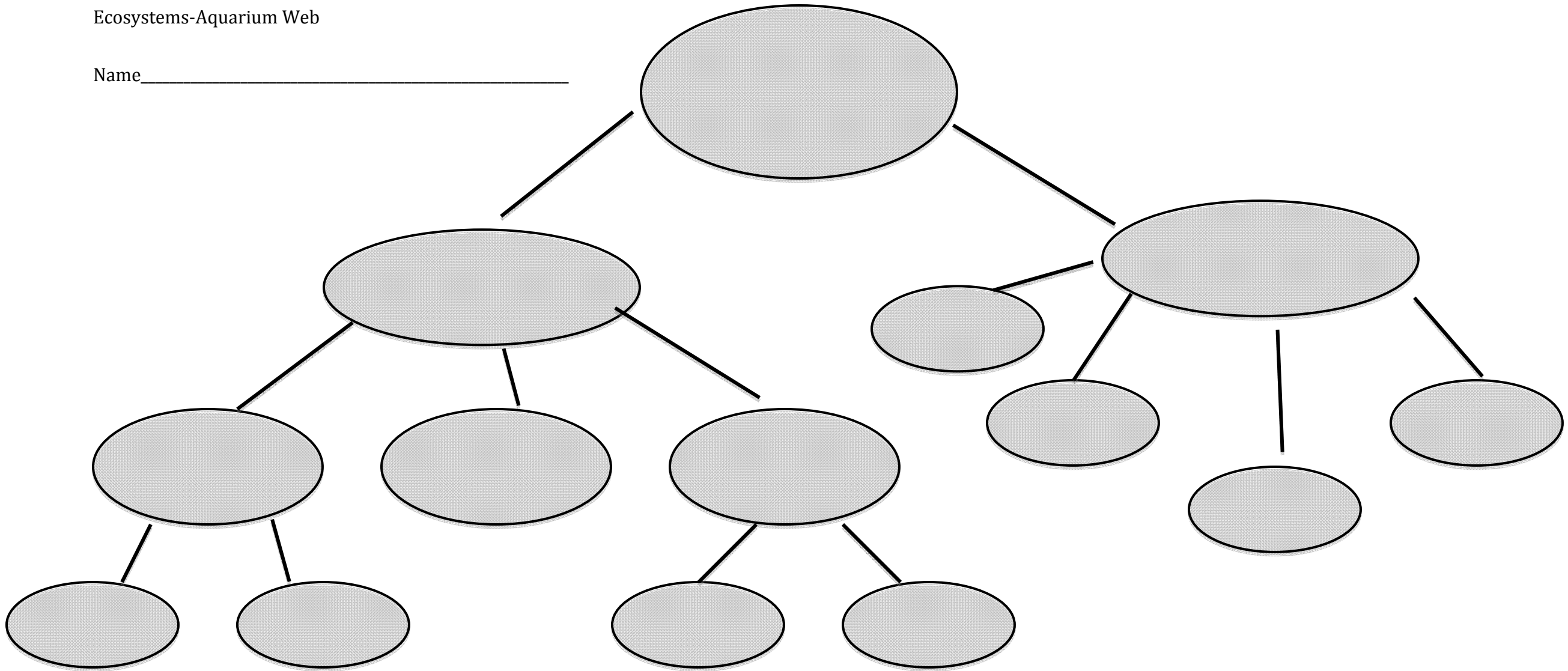


Explain your food chain/web.

Be sure to use these words in your writing:
consumer, energy, producer

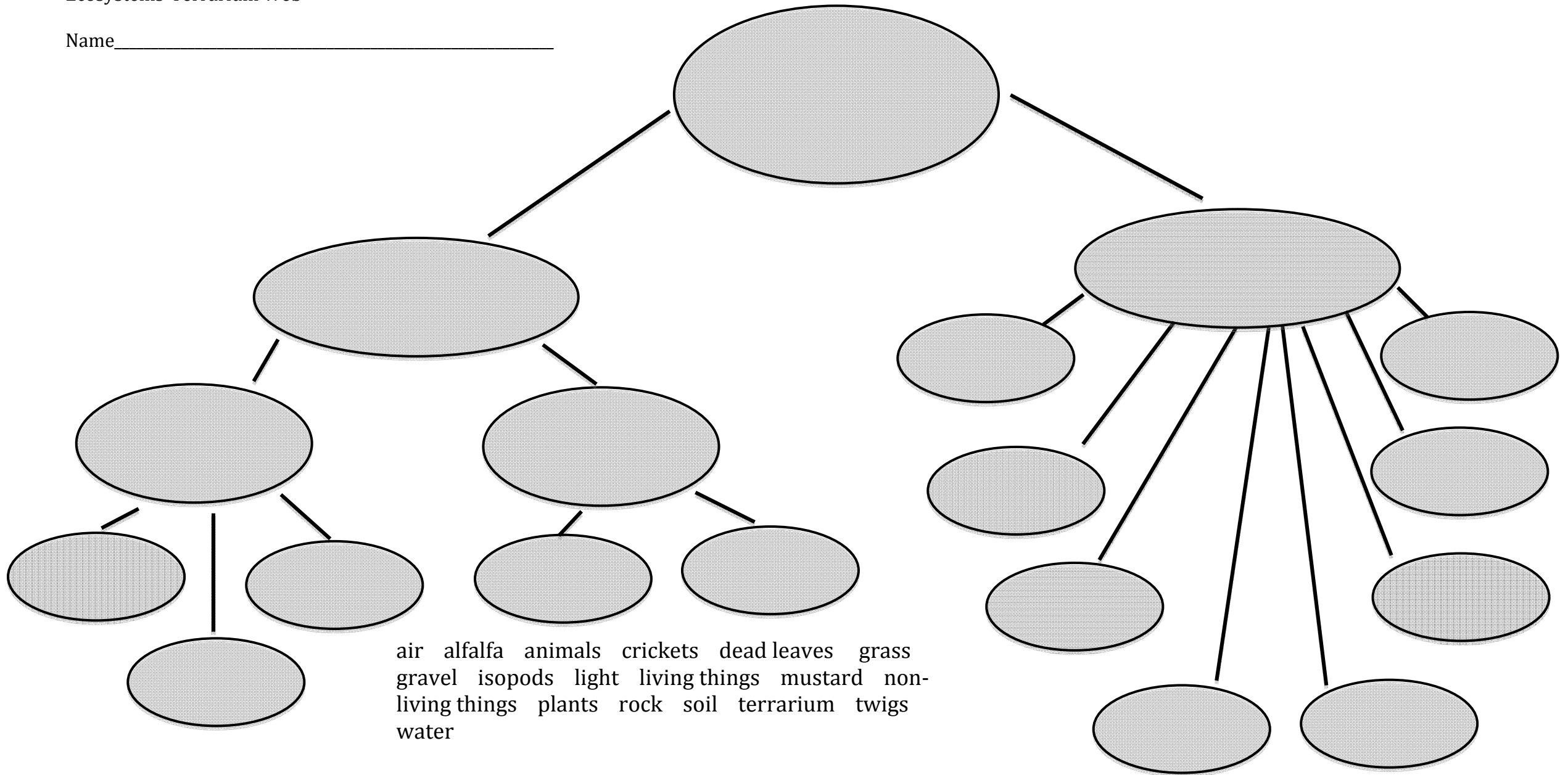
The plant produces energy and the deer consumes it. Then the wolf produces the energy from the deer. And the coyote produces energy from the deer. The bear produces the energy from the wolf. The bear produces the energy from the coyote. I have four producers one consumer. The plant is a producer the deer is a consumer. The coyote is a producer and wolf is a producer. Last the bear is a producer

Name _____



air algae animals aquarium duckweed elodea gravel light
living things fish non-living things plants snails water

Name _____



Learning Progression

STC Ecosystems Change

Prerequisite skill:
Ecosystems are interdependent.

Learning Target 1:
All plants and animals change the ecosystem where they live. If this change reduces another organism's access to resources, that organism may move or die.
Lesson 7 LS2E

Success Criteria:
I can describe how one organism could change the balance of the ecosystem.

Formative Assessment:
Answer this question in one or two paragraphs:

What would happen to your ecosystem if all the plants in it died? Include two or more details to support your conclusion.

Use Interdependent relationships form

Learning Target 2:
A pollutant is anything that can harm living organisms. Pollutants can affect the stability of an ecosystem.

Lessons 8-13 LS2E, LS2F

Success Criteria:
I can observe and record the effects of pollutants in the ecosystem.

Formative Assessment:

A) Use data collection forms (11A) to record the results of introducing different pollutants into the ecosystems.

B) Present a group report that briefly discusses the experimental results.

Learning Target 3:
People affect ecosystems both positively and negatively.

Lesson 14-15 LS2F

Success Criteria:
I can give examples of how people affect an ecosystem both positively and negatively.

Formative Assessment:
Reflective Writing:
How People Affect Ecosystems
People can affect ecosystems in good (positive) or bad (negative) ways. Give examples of helpful and harmful behavior and then explain how that behavior can help or hurt an ecosystem.

Big Idea:
Ecosystems can be affected by change. Stability can be impacted by human events. Pollutants can affect the populations that can be supported in a food web.
LS 2E 2F

Later big ideas that build on this big idea include:

One geographical area may contain many Ecosystems.

ECOSYSTEMS

Big Idea: Ecosystems can be affected by change. Stability can be impacted by human events. Pollutants can affect the populations that can be supported in a food web. LS 2E 2F

Formative Assessment Task Cover Sheet

Learning Target #1	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: Answer this question in one or two paragraphs. What would happen to your ecosystem if all the plants in it died? Include two or more details to support your conclusion. Use Interdependent relationships form.</p>	<p>Administration Tips: This assessment works well right before starting the pollution activities.</p> <p>Suggestions for Instructional Adjustments: I would insist that the students use the words in the word bank.</p>
<p>Learning Target: All plants and animals change the ecosystem where they live. If this change reduces another organism’s access to resources, that organism may move or die. Lesson 7 LS2E</p>	
<p>Success Criteria I can describe how one organism could change the balance of the ecosystem.</p>	
<p>Student Task Sheet Included: Yes Student Work Samples Included: Yes</p>	

ECOSYSTEMS

Big Idea: Ecosystems can be affected by change. Stability can be impacted by human events.

Pollutants can affect the populations that can be supported in a food web. LS 2E 2F

Learning Target #2	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task: A) Use data collection form (11A) to record the results of introducing different pollutants into the ecosystems or record in science journal. B) Present a group report that briefly discusses the experimental results.</p>	<p>Administration Tips: The forms in the manual work well or students can make their own form in their science journal. Be sure the students are using their data as the basis for the report.</p> <p>Suggestions for Instructional Adjustments: This is an area where “Student Talk” can be used as the students observe and before they write anything down.</p>
<p>Learning Target: A pollutant is anything that can harm living organisms. Pollutants can affect the stability of an ecosystem.</p> <p>Lessons 8-13 LS2E, LS2F</p>	
<p>Success Criteria I can observe and record the effects of pollutants in the ecosystem.</p>	
<p>Student Task Sheet Included: no Student Work Samples Included: yes</p>	

ECOSYSTEMS

Big Idea: Ecosystems can be affected by change. Stability can be impacted by human events.

Pollutants can affect the populations that can be supported in a food web. LS 2E 2F

Learning Target #3,	
Assessment Task Details	Teacher Background
<p>Brief Description of the Assessment Task Reflective Writing: How People Affect Ecosystems People can affect ecosystems in good (positive) or bad (negative) ways. Give examples of helpful and harmful behavior and then explain how that behavior can help or hurt an ecosystem.</p>	<p>Administration Tips: Use this assessment at the culmination of the Ecosystems unit.</p> <p>Suggestions for Instructional Adjustments: Depending on the age of the students you may have to have a discussion giving an example of a positive and negative affect on the environment and why it is one or the other. I allowed my less capable students to use that example and to elaborate on it.</p>
<p>Learning Target: People affect ecosystems both positively and negatively. Lesson 14-15 LS2F</p>	
<p>Success Criteria I can give examples of how people affect an ecosystem both positively and negatively.</p>	
<p>Student Task Sheet Included: yes Student Work Samples Included: no</p>	

Interdependent Relationships

Name Jayson Zuchli

Date 2-29-12

Answer this question in one or two paragraphs.

What would happen to your ecosystem if all the plants in it died?
Include two or more details to support your conclusion.

In the Terrarium if all the plants died the crickets would die because of starvation. But the isopods would be happy because that would be a lot of food. But there would not be very much oxygen.

Word bank: dependent, interdependent, terrarium, aquarium, organisms, ecosystem

Interdependent Relationships

Name Ellie

Date 2-29-2012

Answer this question in one or two paragraphs.

What would happen to your ecosystem if all the plants in it died?
Include two or more details to support your conclusion.

If all the plants died in my terrarium, the crickets would die because the crickets eat the plants for food. And plus there would be no air without the plants. No isopods or crickets would be alive.

Also there would be no protection from predators. Or nutrients for the animals the animals would be dead from hunger, protection, that's what would happen if there was no plants.

Word bank: dependent, interdependent, terrarium, aquarium, organisms, ecosystem

Interdependent Relationships

Name _____

Date 2/29/12

Answer this question in one or two paragraphs.

What would happen to your ecosystem if all the plants in it died?
Include two or more details to support your conclusion.

When all the plants die in the aquarium the gravel starts to move around. When all the plants die there's no protection for the fish or the snails. There's also no food for the fish, when the plants die.

In the aquarium there will be no plants to produce oxygen for the animals that were living with them, without the plants the snails will have no where to climb on and sit on besides the wall.

Without the plants the aquarium would not be an aquarium because the fish and maybe the snails would not live, that's what would happen.

Word bank: dependent, interdependent, terrarium, aquarium, organisms, ecosystem

Interdependent Relationships

Name

Josiah

Date

2-29-12

Answer this question in one or two paragraphs.

What would happen to your ecosystem if all the plants in it died?

Include two or more details to support your conclusion.

If all of the plants died the fish would not have oxygen or food so they would die. The fish would also die because they would not have protection.

Also the snails would die after a while. But the snails would stay alive for a while because dead plants and dead fish are food for them. The reason I said they would die after a while is because after a while the snails don't have any food left so they die.

Word bank: dependent, interdependent, terrarium, aquarium, organisms, ecosystem

The Terrarium Ecosystem That Got Smaller

The plants are falling over and lots of plants are dead. There is a few isopods left. All of the plants were tall some 5 inches tall. than we started pollute with lots of salt water than they started to shrink. Some isopods died. Oh and before we started polluting we had crickets but they all died. While the plants were dieing there roots started to turn brown and pop out of the dirt.

Than later the isopods started to die than all of them died. Than something wierd happened. Tons and tons of isopods started to come out of the ground and they were all babys. Than we found out that these are isopods that hatched out of eggs. Now some isopods are alive but a few died.

When I was observing I saw isopod tunnels under ground and it was cool. the tunnels twisted and turned and sometimes it stoped and there was a little room. The rooms were all small just the right size for an isopod.

- The mustard is falling over
- Some of the rye grass is dead.
- There are salt crystals on the leaves.
- The mustard and alfalfa are shrinking.
- There are only a few isopods left.

Keeping a Record of Our Experiment

Keep a daily record of your experiment. Tell when you add more pollutant and how much you add. Observe both the terrarium and the aquarium in your experiment and record your observations.

	Terrarium	Aquarium
Date of Observations	3/5/12	3/5/12
What We Did	We polluted the terrarium on Friday.	We saw the water go into the aquarium
Amount of Pollutant Added	9	9
pH	green	green
Description of Plants (quantity, size, color)	Plants are fall over	
Number of Plants		
Description of Algae		
Other Observations (for example, color, odor, condition of environment)	its growing	

Keeping a Record of Our Experiment

Keep a daily record of your experiment. Tell when you add more pollutant and how much you add. Observe both the terrarium and the aquarium in your experiment and record your observations.

	Terrarium	Aquarium
Date of Observations	3/8/12	3/8/12
What We Did	We poured less salt moisture.	Then it dripped in it.
Amount of Pollutant Added	9 scoops	9 scoops
pH	green	green
Description of Plants (quantity, size, color)	Dying leaves	still living
Number of Plants		
Description of Algae		
Other Observations (for example, color, odor, condition of environment)	it is kind of brown	

How People Affect Ecosystems

Name _____

Date _____

People can affect ecosystems in good (positive) or bad (negative) ways. In the questions below, give an example of helpful or harmful behavior and then explain how that behavior can help or hurt an ecosystem.

Give one example of how humans can improve the health of an ecosystem.

This is helpful because _____

Give one example of how humans can hurt or harm an ecosystem.

This is harmful because _____

Ecosystems

Bibliography

Dylan, William. *Embedded Formative Assessment*. Bloomington, IN: Solution Tree, 2011. Print.

Keeley, Page. *Science Formative Assessment: 75 Practical Strategies for Linking Assessment, Instruction, and Learning*. Thousand Oaks, CA: Corwin, 2008. Print.

Popham, W. James. *Transformative Assessment*. Alexandria, VA: Association for Supervision and Curriculum Development, 2008. Print.