

3.5 What's the Difference?

Story Extension for This Lesson:

Comparing plants to animals and plants to other plants will reveal the things plants need to stay alive, and how some need more resources than others (light, water, etc.).

Grade: 3

Strand: Growth and Changes in Plants

Big Ideas:

- Plants have distinct characteristics. (Overall expectations 2 and 3)

Overall Expectations:

1. investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow

Specific Expectations:

1.1 assess ways in which plants are important to humans and other living things, taking different points of view into consideration describe ways in which plants and animals depend on each other
3.6 describe ways in which plants and animals depend on each other

Inquiry Skills:

Recording, Comparing

Instructions:

This activity has two parts. The first part is a comparison between plants and animals. This will identify traits that students will be able to acknowledge as uniquely plant-like. In the first part, a comparison will be made between two or more plants to show the subtle differences between the plants. This will give the students a better understanding of the need for the variety of plants in nature.

In this activity, the teacher could select the animals and the plants to make sure that the differences are seen clearly or they could leave the choices up to students. In some scenarios, there might be a specific plant or plants that the class would like to focus on.

Materials List:

- comparison chart
- pencils or pens

Assessment Strategy:

Use The Learning Process to guide students to learn how to research, define and assess the right solutions to the challenge.

Begin the investigation by asking the students to consider what they believe is the main idea of the assignment. This creates an opportunity for the students to take charge of their learning. The students will create their own main topic sentence. This can be done using The Learning Process Sheet. The student can write down the "Big Idea" and then conference with the teacher about whether or not this is accurate. On The Learning Process sheet there is room for the student to write down any new information or suggestions that come up during the conference. Once the student has the correct concept, they are ready to move forward.

From the teacher's perspective, you could level (grade) the depth of their understanding of the big idea from the content of their conversation. This process is repeated at each of the four stages of The Learning Process: Introduction; Searching; Outline; and Ta Da. In this way, the teacher has observed the thinking of the students throughout the process of creation and can identify the actual learning of the student. Each stage can receive a level (grade), which the student can see and improve upon, or move forward (if the work is only defined as Level 2 work quality, does the child accept that or want to do better?).

Handouts:

- Compare Plants and Animals
- Compare Plants
- Learning Process
- Plant Investigation Quiz

Compare Plants and Animals

Investigate the differences between plants and animals, then fill in this comparison of Plants and Animal respiration and eating habits. Use visuals and descriptions citing reasons and examples discussed during the unit.

Plants	Explain	Animals
	What parts do they have?	
	How do they grow?	
	How do they move?	
	How do they breathe?	
	How do they eat?	

From this comparison, create a series of questions you would like to ask your expert. Questions!

1.
2.
3.
4.

Compare Plants

Now, choose two (2) different types of plants to investigate the differences between them, then fill in this comparison of Plants chart. Use visuals and descriptions citing reasons and examples discussed during your research.

	Explain	
	What parts do they have?	
	How do they grow?	
	How do they move?	
	How do they breathe?	
	How do they eat?	

From this comparison, create a series of question you would like

to ask your expert. Questions!

1.
2.
3.
4.

The Learning Process

Inquiry Process: Introduce – *What is the BIG idea?*

Traits

- Where should I look?
- Draw and write ideas down
- Works with groups to create a plan
- Main (“Big”) Ideas
- Completed a meeting about Main (“Big”) Ideas

Step 1: The BIG Question

Step 3: Meeting Notes

Level:

Excellence = 4, Better = 3, Okay = 2, Needs work = 1

Inquiry Process: Search – *Developing Questions, Searching for Information and Answers*

Traits

- Listens, talks, views, and reads
- Uses the Q-chart
- Works with teams
- Completed a meeting to improve questions

Guiding Questions (One (1) guiding questions from each column and each row.)

	Is/Is not	Do\Did(not)	Can (not)	Would/Should	Will	Might/Could
Who						
What						
Where						
When						
How						
Why						

Write out the completed questions in full. (You may change these or add to them during the process.)

Who	
What	
Where	
When	
How	
Why	

Step 3: Meeting Notes

Level:

Excellence = 4, Better = 3, Okay = 2, Needs work = 1

Inquiry Process: Outline – *Intensify research, Synthesize Information, Connect Knowledge*

Traits

- Engages in deeper reading and researching: Books, articles, and websites.

- Checks sources, are they truthful
- **Joins information**
- Cooperates
- Use appropriate technology
- Completed a meeting with teacher about notes

Step 3: Conference Notes	Level:
---------------------------------	--------

Excellence = 4, Better = 3, Okay = 2, Needs work = 1

Inquiry Process: **“Ta Da!”** – *Sharing Learning*

Traits

- Completed a meeting
- Demonstrates their thinking
- **Teaching others**
- Reflects upon **the learning process**
- Works well and sharing with teams to complete project

Step 3: Conference Notes	Level:
---------------------------------	--------

Excellence = 4, Better = 3, Okay = 2, Needs work = 1

--

Plant Investigation Quiz

Name: _____

Section A. Multiple Choice Questions

Directions: Place the letter of the correct answer in the space provided.

1. Plant are a big part of the ecosystem. But what is their function in the Energy Pyramid?

- (a) Decomposers
- (b) Producers
- (c) Generators
- (d) Consumers

Answer: _____

2. What is Photosynthesis?

- (a) the process plants use to change food into energy
- (b) the process plants use to change the sun's energy and water into food for themselves
- (c) the process animals use to change the sun's energy and water into food for themselves
- (d) the process animals use to change food into energy

Answer: _____

3. Characteristics of **ALL** living organisms include all of the following, **EXCEPT** ...

- (a) they need energy and produce wastes
- (b) they reproduce and grow
- (c) they respond to their environment and adapt
- (d) they grow and move freely in their environment

Answer: _____

4. Where do all forms of life draw their energy from?

- (a) Plants
- (b) The Sun
- (c) the Soil
- (d) Water

Answer: _____

Section B. Wordlist Questions

Directions: Match the vocabulary words in Column 1 with the choices in Column 2.

Column 1 Vocabulary Words		Column 2 Choices
5. Native plants		A. A plant type that does not belong in an area, and can harm the ecology
6. Invasive		B. A wildflower, or wild plant growing in an area not wanted
7. Weed		C. Where all plants get their energy
8. Roots		D. Plants that grow locally and are not brought in, or harm other plants and animals.
9. Sun		E. A structure in the ground that supports the plant in its growth

Section D. Labelling

10. Label the types of leaves that are in the diagrams below.



toothed/serrated

heart shaped

entire

compound leaf

lobed leaf

Section E. Questions with Written Answers

Directions: Answer the one of the following questions in a sentence.

11. How do plants meet their need for air, water, light, warmth, and space?

12. What do plants do, that helps out the animals on the planet?

	Level 4	Level 3	Level 2	Level 1
Knowledge and Understanding				
Understanding of content	Student demonstrates thorough understanding of content.	Student demonstrates considerable understanding of content.	Student demonstrates minimal understanding of content.	Student needs to continue to develop their understanding of content.
Communication				
Use of conventions, vocabulary, and terminology	Student uses vocabulary, of the subject with a high degree of effectiveness.	Student uses vocabulary, of the subject with considerable effectiveness.	Student uses vocabulary, of the subject with promising effectiveness.	Student uses vocabulary, of the subject with considerable effectiveness.
Application				
Application of knowledge and skills in familiar contexts	Student applies knowledge and skills in familiar settings with a high degree of effectiveness.	Student applies knowledge and skills in familiar settings with considerable effectiveness.	Student applies knowledge and skills in familiar settings with some effectiveness.	Student needs to develop knowledge and skills in familiar settings.

Growth and Change 1.7

Plant Investigation Quiz

Name: _____

Section A. Multiple Choice Questions

Directions: Place the letter of the correct answer in the space provided.

1. Plants are a big part of the ecosystem. But what is their function in the Energy Pyramid?

- (a) Decomposers
- (b) Producers
- (c) Generators
- (d) Consumers

Answer: _____

2. What is Photosynthesis?

- (a) the process plants use to change food into energy
- (b) the process plants use to change the sun's energy and water into food for themselves
- (c) the process animals use to change the sun's energy and water into food for themselves
- (d) the process animals use to change food into energy

Answer: _____

3. Characteristics of **ALL** living organisms include all of the following, **EXCEPT** ...

- (a) they need energy and produce wastes
- (b) they reproduce and grow
- (c) they respond to their environment and adapt
- (d) they grow and move freely in their environment

Answer: _____

4. Where do all forms of life draw their energy from?

- (a) Plants
- (b) The Sun
- (c) the Soil
- (d) Water

Answer: _____

Section B. Wordlist Questions

Directions: Match the vocabulary words in Column 1 with the choices in Column 2.

Column 1 Vocabulary Words		Column 2 Choices
5. Native plants		A. A plant type that does not belong in an area, and can harm the ecology
6. Invasive		B. A wildflower, or wild plant growing in an area not wanted
7. Weed		C. Where all plants get their energy
8. Roots		D. Plants that grow locally and are not brought in, or harm other plants and animals.
9. Sun		E. A structure in the ground that supports the plant in its growth

Section D. Labelling

10. Label the types of leaves that are in the diagrams below.



toothed/serrated

heart shaped

entire

compound leaf

lobed leaf

Section E. Questions with Written Answers

Directions: Answer the one of the following questions in a sentence.

11. How do plants meet their need for air, water, light, warmth, and space?

12.What do plants do, that helps out the animals on the planet?

	Level 4	Level 3	Level 2	Level 1
Knowledge and Understanding				
Understanding of content	Student demonstrates thorough understanding of content.	Student demonstrates considerable understanding of content.	Student demonstrates minimal understanding of content.	Student need to continue to develop their understanding of content.
Communication				
Use of conventions, vocabulary, and terminology	Student uses vocabulary, of the subject with a high degree of effectiveness.	Student uses vocabulary, of the subject with considerable effectiveness.	Student uses vocabulary, of the subject with promising effectiveness.	Student uses vocabulary, of the subject with considerable effectiveness.
Application				
Application of knowledge and skills in familiar contexts	Student applies knowledge and skills in familiar settings with a high degree of effectiveness.	Student applies knowledge and skills in familiar settings with considerable effectiveness.	Student applies knowledge and skills in familiar settings with some effectiveness.	Student needs to develop knowledge and skills in familiar settings.