WHAT IS IN MY HABITAT?

THE GREENING OF DETROIT

OVERVIEW:
Students will use their senses to observe what is in the habitat and will begin a journal of their observations.

OBJECTIVES:
After completing this activity, students should be able to:
1. Define a habitat and the essential parts of a habitat that wildlife need to live.
2. Define observation and explain how the five senses are used in this process.
3. Start a journal of what they observe in the habitat.

BACKGROUND:
Detroit used to be known as the "City of Trees." But since 1950, the city has lost 500,000 trees to disease and urban growth. One result of the loss of so many trees was a loss in habitats for plants and animals in Detroit.

There are several types of habitats that are found in Detroit. *A **wetland** is a habitat that is constantly wet and flooded at more or less regular intervals. A **forest** is a community of trees, shrubs, herbs, and associated plants and organisms covering a considerable area, and using oxygen, water, and soil nutrients as it attains maturity and reproduces itself.*

The habitat will be constructed from native southeastern Michigan plant species. ***Native plant species** are plants that have adapted over eons to the soils and climate*. These plants will attract native wildlife by providing food and shelter necessary for them to live in our city.

Observation is a necessary skill for the students to obtain or enhance for them to be affective caretakers of their outdoor classroom. They will start a journal to be used with for observations of their habitat. They will enter new observations each week. Younger children can draw realistic pictures in their journal.

PROCEDURE:

1. Activate prior knowledge. Ask the students if they know what observation means and how do they observe something. Ask the students to identify their senses. ***Observation** means things that are seen, heard, felt, tasted or smelled.*
2. Inform the students that they will be playing a game. The

SUBJECT:
Life Science: Ecology
English

GRADE LEVEL:
K-5

Michigan Curriculum Framework Science Content Benchmarks:
Constructing New Scientific Knowledge
(C) 1.1.1 Generate questions about the world based on observation.

Reflecting on Scientific Knowledge
(R) 11.1.2 Show how science concepts can be illustrated through creative expression such as language arts and fine arts.

GROUP SIZE:
Small groups
made up of 4-5 students

TIME:
1 Period, 50 minutes

TEACHING STRATEGIES:
Discussion
Cooperative learning

MATERIALS:
- 1 Sheet of 8 1/2 x 11paper
- 6 Clipboards
- 6 Observation Sheets
- 1 Pencil per student
- Magnifying Glasses

WHAT IS IN MY HABITAT?

students will be going out into their habitat. *A **habitat** is a place where plants and animals live.* Each group will have to record as many sight and sound observations in the habitat as possible. * *Note for younger students you could chose to hide objects for them to find and observe with their magnifying glasses.*

3. Put the students into small groups of 4 or 5 students. Each group will have one recorder which will write down the observations. * *Note for younger students you could record their observations.*
4. Have the students form a circle and close their eyes. Ask them to be perfectly silent for 60 seconds and to remember everything they hear. After observation time have them get together with their groups and give their answers to the recorder. Give the groups no more than five minutes to record their observations.
5. Bring the class back together and inform them that they will have 15 minutes to observe and record everything in their habitat. Have them be as specific as possible. * *Note make up some ground rules. For example they cannot put everyone name in the class as an observation.*
6. After the observation time have them come together and have each person in the group introduce themselves and have the recorder read aloud their findings. The other group recorders should cross out any answers that match theirs. The team with the most answers left are the winners. * *Note for younger students you could chose to just have the team with the most observations be the winners.*
7. Conclusion – take the class out into the habitat each week and discuss the similarities and differences they observe.

- ***Extension of this Lesson***

The observations for the students could be more specific by having them record the weather on these days and ask them to draw conclusions about wildlife they observe and the weather for that day.

The students could also start a database with their observations that list wildlife physical descriptions, time and date of observations.

PROCESSES:
Observe
Classify
Oral Communication
Written Communication

CAREERS:
Ecologist
Naturalist
Forester
Journalism

RESOURCES:
Silverstein, Shel (1964). The Giving Tree. New York: Harper & Row Publishers.

Tresselt, Alvin (1992). The Gift of the Tree. New York: Lothrop, Lee & Shephard Books.

WHAT IS A HABITAT?

THE GREENING OF DETROIT

OVERVIEW:
Students will learn about the essential elements of a wildlife habitat such as food, water, shelter and space.

OBJECTIVES:
After completing this activity, students should be able to:
1. Define a habitat and the essential parts of a habitat that wildlife need to live.
2. Illustrate and diagram the parts of a habitat.
3. Name at least two different types of habitats.

BACKGROUND:
Detroit used to be known as the "City of Trees." But since 1950, the city has lost 500,000 trees to disease and urban growth. One result of the loss of so many trees was a loss in habitats for plants and animals in Detroit.

There are several types of habitats that are found in Detroit. *A **wetland** is a habitat that is constantly wet and flooded at more or less regular intervals. A **forest** is a community of trees, shrubs, herbs, and associated plants and organisms covering a considerable area, and using oxygen, water, and soil nutrients as it attains maturity and reproduces itself.*

PROCEDURE:

1. Activate prior knowledge. Show a poster on Michigan habitats and ask the students what they see. Bring out the vocabulary that is desired: *A **habitat** is a place where plants and animal lives.*
2. For older students, discuss different types of habitats (wetland, forest, field, etc.)
3. Ask students for examples of animals and their habitats. List them on the chalkboard.
4. Go into your outdoors classroom and find examples of food, water and shelter for Detroit animals.
5. Inside, each student will receive one picture card of a native Michigan animal. Each student will draw a habitat for their animal and label the food, water and shelter of the animal. Don't forget the sun!
6. After 15 minutes of working the timekeeper informs the teacher that time is up.
7. Each group has three minutes to present their habitat

SUBJECT:
Life Science: Ecology

GRADE LEVEL:
K-5

Michigan Curriculum Framework Science Content Benchmarks:
Reflecting on Scientific Knowledge
(R) 11.1.2 Show how science concepts can be illustrated through creative expression such as language arts and fine arts.

GROUP SIZE:
Small groups
made up of 4-5 students

TIME:
1 Period, 50 minutes

TEACHING STRATEGIES:
Guided reading
Discussion
Cooperative learning

MATERIALS:
- Wildlife Cards
- 1 sheet of 8 1/2 x 11 white construction paper per student
- 10 boxes Crayons and/or Markers
- Paint
- Paint Brushes
- Stickers
- 1 pencil per student
- Chalkboard
- 1 Piece of chalk

Habitats

Web of Life

THE GREENING OF DETROIT

OVERVIEW:
Students will use a ball of twine to create a forest ecosystem "web of life," illustrating interdependence within a natural community and the importance of biodiversity within it.

OBJECTIVES:
After completing this activity, students should be able to know:
1. Describe interdependence within an ecosystem.
2. Explain that the loss of diversity weakens an ecosystem.

BACKGROUND:
Every animal depends on other plants or animals for their food. Plants use energy from the sun to make their own food through photosynthesis. In turn, some animals eat plants and other animals eat the plant-eating animals.

Vocabulary

Ecosystem: a community consisting of different populations of living things.
Predator: an animal that lives by killing and eating other animals.
Prey: an animal hunted or killed by another animal for food.
Producer: a living thing (as a green plant) that makes its food from simple inorganic substances (as carbon dioxide and nitrogen) and many of which are food sources for other organisms.
Consumer: a plant or animal that requires complex organic compounds for food which it obtains by preying on other living things or eating particles of organic matter.
Decomposer: an organism (as a bacterium or a fungus) that feeds on and breaks down dead plant or animal matter
Carnivore: an animal that eats other animals
Herbivore: an animal that eats only plants.
Omnivore: an animal that eats both plants and other animals.

PROCEDURE:
1. Ask, "What is an ecosystem?" Have the students discuss.
2. Hand out the picture cards and ask the students to stand in a circle with the picture around their neck.
3. Have each student introduce themselves as their role card and name one interesting fact about their character.
4. The student that represents the sun holds the ball of string. Ask the students who would first receive energy from the sun. A producer! The ball of yarn will be passed to the first producer while the sun continues to hold the end of the string.
5. Ask the students which organisms require energy from a producer. A consumer! The ball of yarn will be passed to the consumer while the first producer and sun continue to hold onto the string.

SUBJECT:
Life Science: Ecology

GRADE LEVEL:
K-5

Michigan Curriculum Framework Science Content Benchmarks:

Elementary

Constructing New Scientific Knowledge
(C) 1.1.1 Generate questions about the world based on observation
(C) 1.1.2 Develop solutions to problems through reasoning, observation, and investigations.

Ecosystems
(LEC) 111.5.1 Identify familiar organisms as part of a food chain or food web and describe their feeding relationships within the web.

Geosphere
(EG) V.1.2 Recognize and describe types of earth materials.

TIME:
1 Period, 50 minutes

TEACHING STRATEGIES:
Discussion
Cooperative learning

Web of Life

6. Eventually, everyone in the circle will be connected to the string and a complex web will form within the group. Ask, "What might happen if one part of the web was missing? Would the rest of the web be affected"
7. Demonstrate this connection by having one student sit down. While sitting, have them gently tug on their string. Anyone who feels a tug should sit down to show their connection. Then those students should gently tug on their strings and anyone who now feels a tug on their string should sit down and tug and so on.
8. Ask, "What does this demonstration show?" If the organism's food source is affected, they will be affected. Sometimes these animals can turn to a different food source, but if the green plants disappear, everything will die. They are our link to the energy of the sun.
9. Discuss with the students different causes of organisms disappearance. These may include habitat loss or destruction.

MATERIALS:

- 1 ball of twine or string
- Pictures of plants, animals and decomposers
- String for tying picture around students necks

PROCESSES:

Observe
Hypothesize
Classify
Oral Communication
Written Communication

CAREERS:

Ecologist
Naturalist
Forester

SUGGESTED BOOKS:

Appelhof, Mary. (1982) Worms Eat My Garbage. Kalamazoo, Michigan: Flower Press.

Habitats

Potato Activity

THE GREENING OF DETROIT

OVERVIEW:
Students will observe a potato in their outdoor classroom and monitor changes over three days.

OBJECTIVES:
After completing this activity, students should be able to know:
1) The producers and consumers in this experiment
2) Construct a food chain/web based on what was found in potato.
3) Compare and contrast 2 different potatoes

BACKGROUND:
What is a habitat?
What do organisms need to live?
Describe the parts of a food chain.
Construct a food chain/web.
What is a producer?
What is a consumer?

Concept:
A habitat is a place where an organism/living thing lives.

PROCEDURE:
Day 1
1. Construct a potato journal, using brown construction paper, notebook paper, stapler. (We make ours in the shape of a potato)
2. Cut each potato in half and hollow them both out. Cut a small "v" shaped notch in one potato to allow living things to enter. Place potatoes in two different places, writing down where your potatoes are in your journal. Make a prediction in your journal about what you think will happen to your potato. What will it look like tomorrow? Will there be anything inside? If not, why not?
3. Day One journal will look something like this with the following prompts (adapt to fit your needs):

Date:
Potato #1 Location:
Potato #2 Location:
Prediction: I think…
I wonder…

Day 2
1. Make observations of both potatoes and draw diagrams of both.
2. Possible discussion questions include: What did you observe? Do you see evidence of any living creatures finding your potato? Did living things find both potatoes? Why or why not?
3. After observations, put 2 drops of Karo syrup in one potato and

SUBJECT:
Life Science

GRADE LEVEL:
3-5

Michigan Curriculum Framework Science Content Benchmarks:

Elementary

Ecosystems
(LEC) III.5.1 Identify familiar organisms as part of a food chain or food web and describe their feeding relationships within the web.
(LEC) III.5.2 Describe the basic requirements for all living things to maintain their existence.

TIME:
1 Period, 50 minutes

MATERIALS:
- Potato journal
- Brown construction paper
- Plain paper
- Clipboard
- Pencil
- 2 potatoes per group (groups of 2 or 4)
- Table knives
- Rubber bands
- Karo syrup
- Sharpies
- Tarps
- magnifying glasses

PROCESSES:
Observe
Hypothesize

CAREERS:
Ecologist
Naturalist
Forester

AUTHOR:
Amy Lazarowicz

none in the other (that will be your **control**). Put them back in the SAME environment for a day and see what happens.

4. Day 2 journal will look something like this with the following prompts:

Date:
Diagram of potato #1 (count bugs, what kind, how many are found…)
Diagram of potato #2 (same)
Prediction: I think…
I wonder…

Day 3

1. Make observations of both potatoes and draw diagrams of both.
2. Discuss what was found in each potato and why, using questions listed above.
3. Day 3 journal will look something like this with the following prompts:

Date:
Diagram of potato #1
Diagram of potato #2