

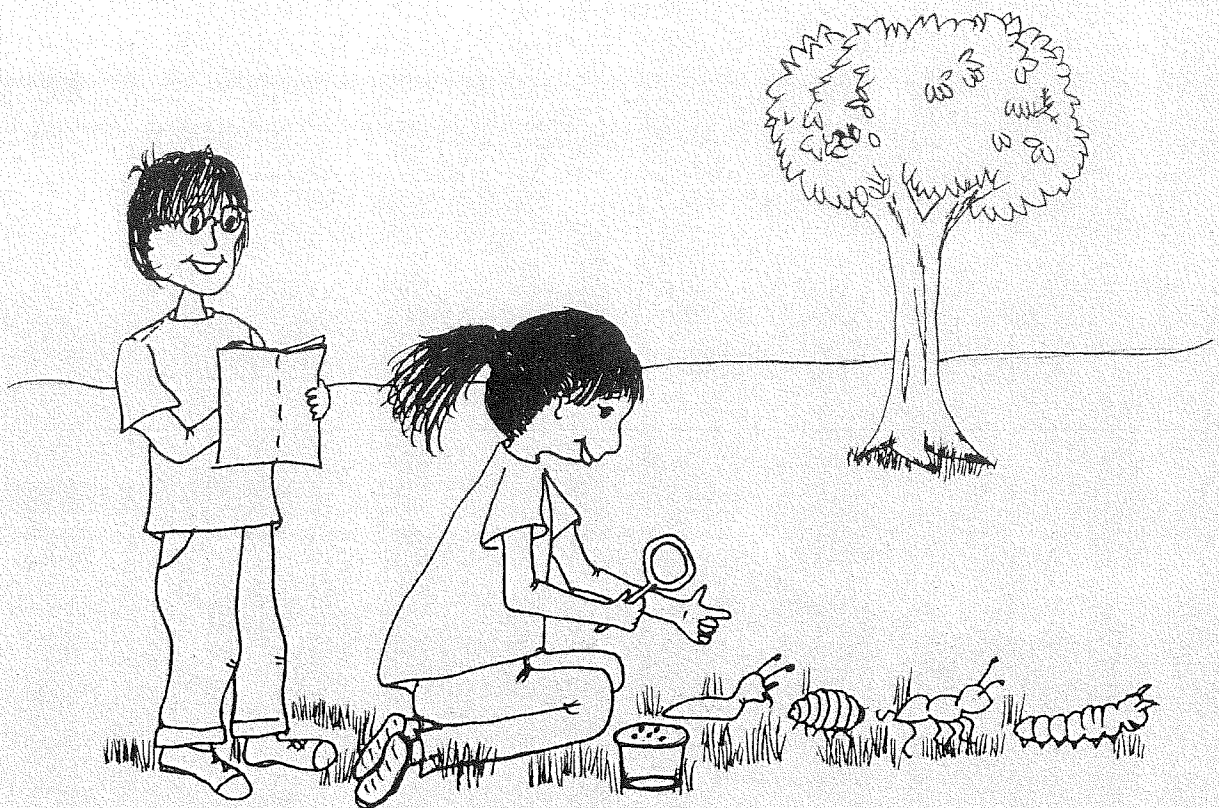
BATTLE CREEK AREA

Mathematics &
Science Center

Student Journal

4LS

Organisms in Their Environment

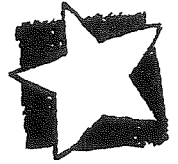


A Fourth Grade Unit
supporting the
Michigan Science K-7 Content Expectations

Name: _____

Name: _____

A C T I V I T Y
Schoolyard Field Trip

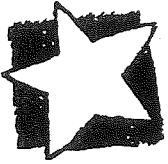


Date: _____

1

-
1. Draw a picture of one animal you observed in the schoolyard in its surroundings. Include in your drawing some of the living and nonliving things that surrounded the animal.

2. Write what you think the animal needs to survive.



A C T I V I T Y

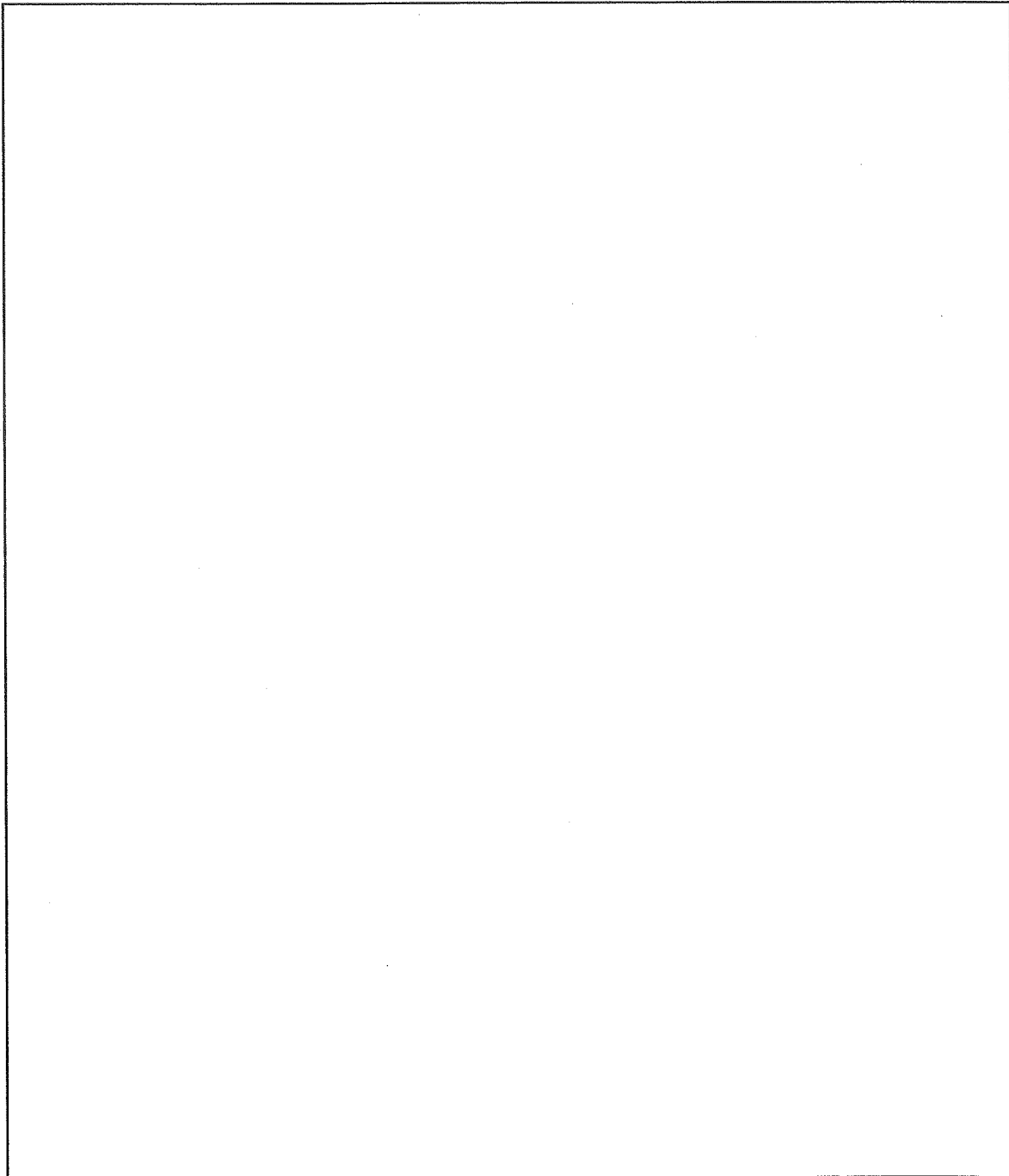
Schoolyard Field Trip (cont.)

Name: _____

Date: _____

1

3. Make a detailed drawing of the animal you selected from the schoolyard. Include labels on the different parts of the animal in your drawing.



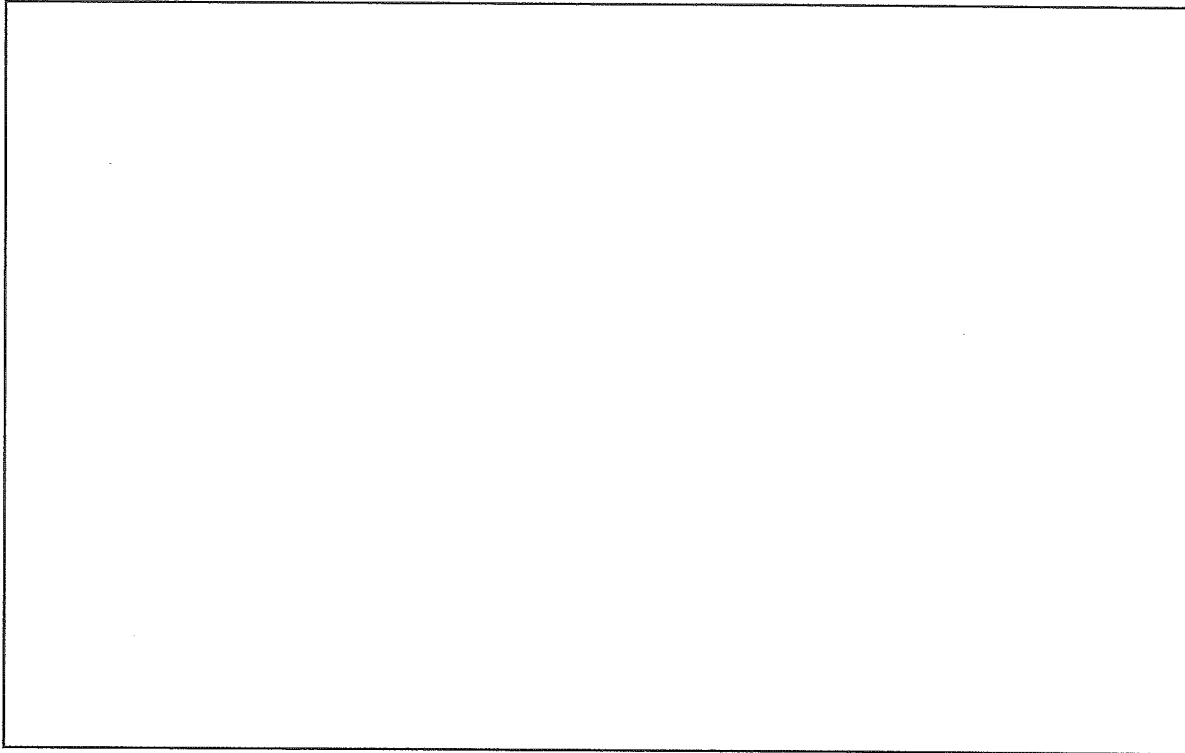
Name: _____



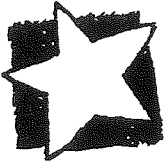
Date: _____

1

1. Draw a picture of the classroom habitat. Include a drawing of some of the animals that live there.



2. Write a question you have about one of the animals in the classroom habitat. Explain how you might investigate your question.



A C T I V I T Y

Making Purposeful Observations of Organisms in Their Habitat

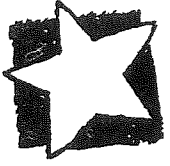
Name: _____

Date: _____

2

Use the thermometer to complete the chart. Write the temperature range in °F and °C for what you think feels hot, warm, cool, and cold.

	Temperature Range in °F	Temperature Range in °C
hot		
warm		
cool		
cold		



A C T I V I T Y
Ecosystems and Habitats

Name: _____

Date: _____

3

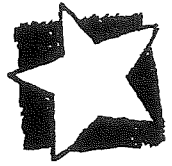
.....

1. The habitat that my group explored was _____.

2. List the plants and animals your group thought could live in that habitat.

3. Write what you think it might be like to live in that habitat.

Name: _____



Date: _____

3

One chilly fall afternoon, Janice was watching a squirrel gather acorns underneath an old oak tree. The squirrel buried some acorns for food during the coming winter months. When the squirrel had enough acorns stored for winter, he put another acorn in his mouth and scurried up the tree, and out of sight.

1. Janice was observing activity in her backyard habitat. Draw and label a picture of the habitat and include plants and animals that you think might survive in a backyard habitat.

2. Write what the plants and animals need to survive in the backyard habitat.

3. Write what would happen if someone chopped down the old oak tree in Janice's backyard.



A C T I V I T Y

**Introducing a Freshwater Habitat
into the Classroom**

Name: _____

Date: _____

4

I Am a Dwarf African Frog

I am a dwarf African frog,
But you won't find me sitting on a log.

I live in the water through the night and day,
Swimming, diving, always at play.

My long hind legs help me to move,
Quick in the water, I'm sure you'll approve.

I go to the surface for a breath of fresh air,
Take a quick breath and I'm out of there.

I stay underwater for quite a long time,
When I need more air, to the surface I climb.

You can see me burbling once in a while,
A tiny air bubble I expire with a smile.

Home is Africa's warm, fresh water lakes,
I am a cold-blooded vertebrate, make no mistake.

I adjust my body temperature to the temp of the lake,
And have a backbone and skeleton that keeps my frog shape.

I have a brown speckled body and narrow tapered head,
And I measure approximately 1.5 inches, or so it is said.

I play the role of the consumer in my pond habitat,
I eat a little bit of this and a little bit of that.

I am minus a tongue and haven't any teeth,
I eat mollusks and crustaceans that live underneath.

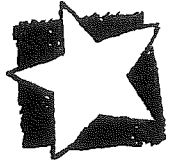
Sometimes I'll nibble an insect or two,
If you were hungry enough, you'd eat one too!

I am a dwarf African frog,
But you won't find me sitting on a log.

Name: _____

Date: _____

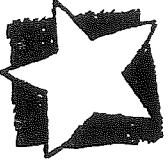
A C T I V I T Y
**Introducing a Freshwater Habitat
into the Classroom (cont.)**



4

1. Draw and label a picture of the dwarf African frog.

2. List the physical characteristics that help the frog to survive. Tell how you think the physical characteristics help the frog to meet its needs to survive.



**Introducing a Freshwater Habitat
into the Classroom (cont.)**

Name: _____

Date: _____

4

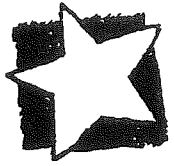
1. Write about one individual difference in a physical characteristic one frog has that might help it to survive.

2. Write what might happen if the frog did not have that characteristic.

Name: _____

Date: _____

A C T I V I T Y
What Other Organisms Can Live Here?

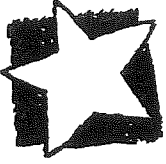


5

1. Draw and label a picture of the pond snail.

2. Write what physical characteristics you observed that you think helps the pond snail to survive in its habitat.

3. Write any questions you have about the pond snail based on your observations.



A C T I V I T Y

What Other Organisms Can Live Here? (cont.)

Name: _____

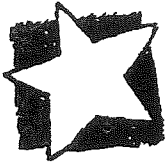
Date: _____

5

1. Draw and label a picture of the guppy.

2. Write what physical characteristics you observed that you think helps the guppy to survive in its habitat.

3. Write any questions you have about the guppy based on your observations.



A C T I V I T Y
Roles Organisms Play

Name: _____

Date: _____

6

.....

Using the plant and animal cards in your ecosystem, make food chains that demonstrate how animals get their source of energy from other living things.

Example: apple -> worm -> bird.



A C T I V I T Y
The Function of Color

Name: _____

Date: _____

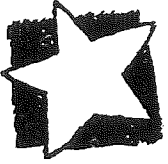
7

1. Name of the animal you have chosen: _____

2. Describe the coloring and markings of your animal.

3. Write a question about the coloring and markings of your animal.

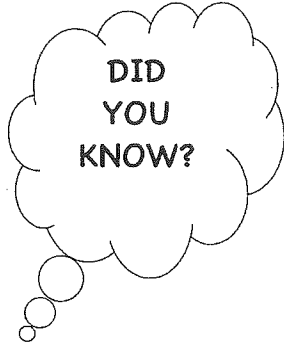
4. List how you think the coloring and markings of your animal help it to survive.



Name: _____

Date: _____

7



Western Skink

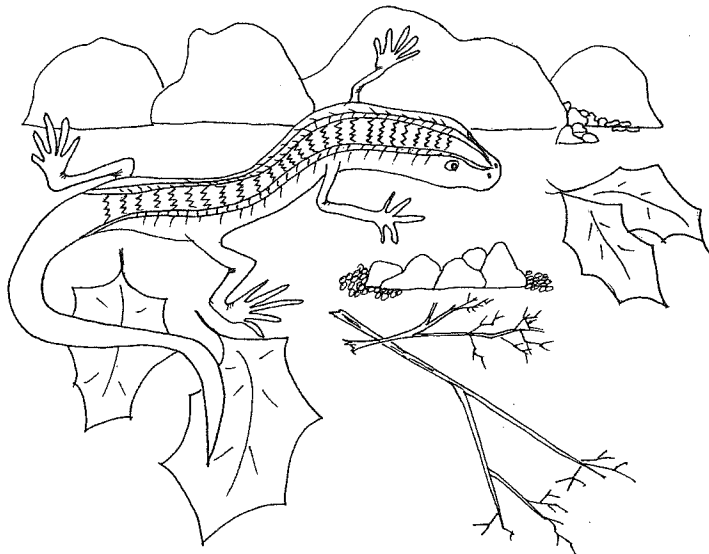
Have you ever heard of a lizard with a bright blue tail? How would a bright blue tail help a lizard to survive? The western skink is a small, shiny-scaled lizard that makes its habitat among the rocks, stones and fallen leaves, sticks, and logs in the western United States. Its habitat includes rocky areas near streams, grasslands, woodlands, forest clearings, and hillsides.

Western skinks are active during the day but are rarely seen. They move about under leaves, between rocks, and logs. You can hear them rustling under the debris hunting for beetles, spiders, crickets, and sow bugs.

The body of the lizard is covered in smooth and shiny, rounded scales. Its back is brown, black, and golden yellow or cream, making it well camouflaged in its habitat. What about that bright blue tail? The younger western skinks have the bright blue tail. The brightly colored tail draws attention away from the body of the lizard toward the tail. Predators, such as hawks, are attracted to the tail. When a predator grabs onto the tail, the tail of the lizard detaches and the lizard is able to run away. The western skink will grow a new tail in a short period of time!

By the time the western skink is an adult lizard, the bright blue tail has faded, although it continues to be able to detach its tail if necessary. The skink grows to be about 19 centimeters in length from nose to tail.

Color the young western skink in its habitat.



Name: _____

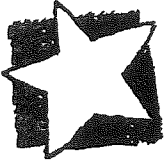


Date: _____

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1. Create and draw an animal. Tell if it is a predator or prey.

2. Write about any characteristics your animal has to help it survive. (Include the physical position of the animal's eyes and other traits your animal has for survival.)



Name: _____

Date: _____

9

Beneficial Relationship and Harmful Relationship

**DID
YOU
KNOW?**

Animals interact with one another in their habitats. Some interactions can be beneficial to both organisms and some interactions can be harmful to one of the organisms. An example of a beneficial relationship is the interaction between the oxpecker and the elephant and other mammals.

Oxpeckers are birds that find their food on the body of other animals. The oxpecker rides on the backs of elephants, hippos, rhinos, zebras, and giraffes. The small African bird gobbles up ticks, lice, and other insect pests that suck the blood of the animals. The elephant and other animals benefit from a body with fewer pests and the oxpecker gets lunch! An added benefit to the relationship is that when the alert bird senses danger, it makes a hissing noise, also alerting its host to danger in the habitat.

The oxpecker may also pluck hair from the giraffes and zebras to use in their nests. As their large hosts move around, the tiny bird eats, rests, sunbathes, and even mates on their backs.

Some interactions between animals can be harmful. An example of a harmful relationship is the relationship between a mammal and a tick, such as a tick on an elephant, deer, dog, or human! The tick burrows into its host, sucking its blood, irritating the skin, and can even cause disease in the host. The tick benefits from the relationship by using the mammal as a food source, but the tick harms the mammal.

Name: _____

Date: _____

A C T I V I T Y
Plant and Animal Interactions
(cont.)



9

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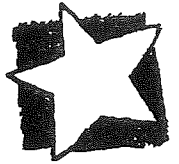
1. Draw a picture of how two different organisms interact in their habitat.

2. Write about the relationship between the two different organisms and tell if the relationship is beneficial or harmful to each organism.

Name: _____

Date: _____

A C T I V I T Y
**Something's Changed in the
Neighborhood!**



10

.....

1. Name of the habitat your group is representing: _____

2. List the living things you might find in your habitat and assign one student to represent each living thing.

3. List the nonliving things you might find in your habitat and assign one student to represent each nonliving thing.

4. Describe the climate of your habitat. _____

5. Determine if one of your members will act as a narrator.

6. Discuss how the actors in your skit will interact with each other.



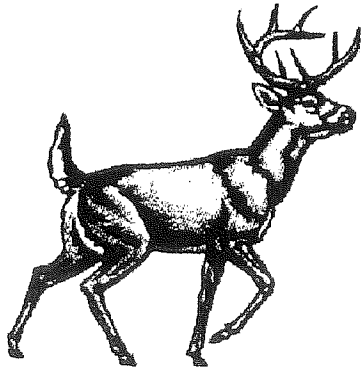
Something's Changed in the Neighborhood! (cont.)

Name: _____

Date: _____

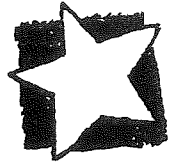
10

Michigan's white-tailed deer makes its home in the forests of the Upper and Lower Peninsula. It eats leaves, moss, and a variety of plants and seeds that grow in the woods. What would happen if the forest were destroyed by fire? Explain how you know this might happen. (Include in your writing the terms *natural balance*, *population*, *survive*, *food web*, and *dependence*.)

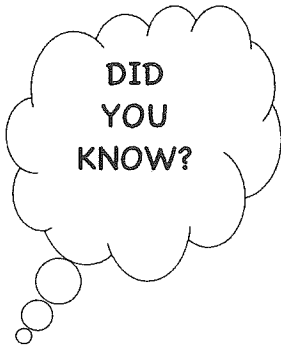


Name: _____

Date: _____



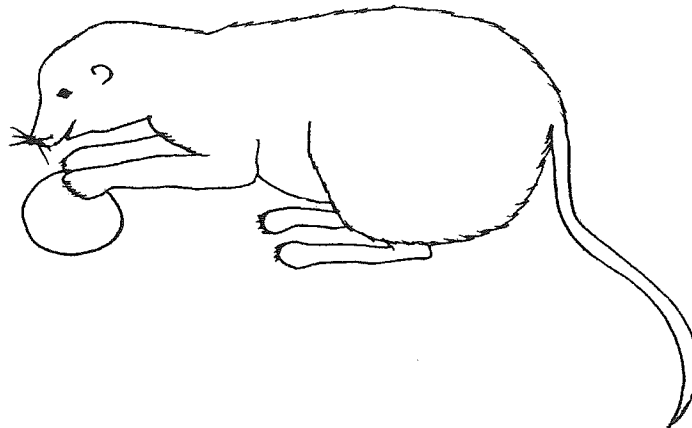
Rats Invaded Hawaii



**DID
YOU
KNOW?**

It is true! Rats do not really belong in Hawaii, but they are there in great numbers. Both plant and animal species have been introduced to new habitats since the first explorers left Europe to find the Americas, Middle East, and other far away lands. How did rats find their way to Hawaii? When sailors from Europe first began visiting Hawaii hundreds of years ago, they introduced rats to the islands. Rats boarded the sailing ships in Europe without notice, following the bags of grain and other foods to the cargo rooms on the ships. When the ships landed in Hawaii, the rats escaped off the ship to make the islands their new home.

Hawaii did not have any predators to hunt the rats so they quickly multiplied! They feasted on the eggs of the nene goose. People were worried about the decreasing population of the nene goose and decided to introduce a predator to the island that would hunt and eat the rats. To protect the geese, people brought the rat-eating mongoose from India to hunt the rats and control their population. Unfortunately, the mongoose preferred the eggs of the nene goose for lunch to a rat, and the nene goose is now endangered.





A C T I V I T Y

There's Something New in the Neighborhood! (cont.)

Name: _____

Date: _____

11

Invasive Species in Michigan

Rusty crayfish - arthropod:

Spiny water flea - crustacean:

Common carp - fish:

Goby - fish:

Ruffe - fish:

Sea lamprey - fish:

White perch - fish:

Zebra mussel - mollusk:

Curly-leaf pondweeds - plant:

Eurasian water milfoil - plant:

Flowering rush - plant:

Purple loosestrife - plant:



Name: _____

Date: _____

12

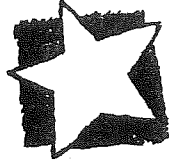
Loggerhead Scavenger Hunt

Use a variety of resources to find the information about the loggerhead turtle in the scavenger hunt. Record the information and the resource where you found it.

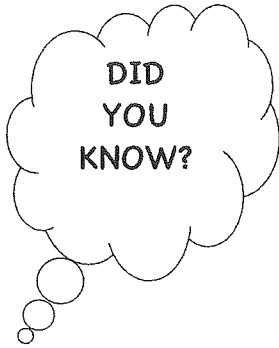
Scavenger Hunt information:	Resource: (Student Journal, Internet, or books and magazines)
1. List three physical characteristics of the loggerhead turtle:	
2. What is the size of the turtle? Length of shell: Weight as an adult:	
3. What is the habitat of the loggerhead sea turtle?	
4. What does the loggerhead eat? Is the loggerhead a predator or prey or both?	
5. Where does the female loggerhead make her nest?	
6. How many eggs do loggerhead turtles lay?	
7. How many days before they hatch?	
8. What happens after the hatchlings emerge from their eggs?	
9. List two ways that humans threaten the survival of the loggerhead sea turtle.	

Name: _____

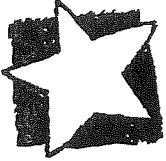
Date: _____



Interesting Facts About the Loggerhead Sea Turtle:



- Loggerhead sea turtles are not considered adults until they have reached 35 years of age.
- Nesting takes place on the same beach where the female loggerhead hatched.
- Only the female loggerheads return to the beach where they hatched.
- The loggerhead sea turtle got its name because of its very large head and heavy strong jaws.
- The top shell of the loggerhead is called a carapace.
- The carapace is bony without ridges and has large, rough scales that do not overlap.
- The carapace of the loggerhead is somewhat heart shaped and rusty colored.
- Adult loggerheads weigh up to 350 pounds.
- Coastal development, houses, hotels, resorts, and condos that cause a loss of habitat threaten the loggerheads.
- Loggerheads are migratory and make some of the longest journeys known of all sea turtle species.
- Loggerheads eat many types of invertebrates, especially mollusks and crustaceans and help control the population of the organisms. They also stir up and change the seabed by digging the ocean floor for their favorite prey.
- Loggerheads are also hosts to as many as 100 species of different plants and animals that make the shell of the loggerhead their habitats. These plants and animals depend on sea turtles to have somewhere to live and multiply. The future of these species is dependent on the survival of the loggerhead turtles.



Name: _____

Date: _____

12

1. Write five of the most interesting facts you learned about the loggerhead sea turtle.

2. Describe the role the loggerhead plays in its habitat.

3. Write why you think it is important to help the loggerhead to survive.

Name: _____

Date: _____

ACTIVITY
Mapping Loggerheads



13

Number	Latitude	Longitude
1	20	7.5
2	19.5	8.5
3	18	9
4	16.5	9
5	16.5	10.5
6	15.5	11.5
7	17.5	12
8	17.5	13
9	15	14.5
10	14	14.5

Number	Latitude	Longitude
31	5.5	5
32	4	4.5
33	2.5	3.5
34	3	2.5
35	4	2.5
36	6	3.5
37	6.5	4
38	8	3.5
39	11	2.5
40	13	3

Number	Latitude	Longitude
11	13.5	14
12	14	13.5
13	15	13
14	15.5	12
15	15.5	11.5
16	13	12.5
17	11	12.5
18	8	12
19	6.5	11
20	6	11.5

Number	Latitude	Longitude
41	15	4
42	15.5	4.5
43	15	2.5
44	13.5	1
45	14.5	.5
46	16	1
47	17	2
48	17.5	4
49	17	5
50	16.5	5.5
51	16.5	6.5
52	18	6.5
53	19.5	6.5
54	20	

Number	Latitude	Longitude
21	5	12
22	4	12.5
23	3	12
24	2.5	11.5
25	3	10.5
26	4	10
27	5	9.5
28	4	8
29	4.5	7.5
30	4	7

After you have completed the first 10 coordinates, connect the dots in the order you plotted them. What do you think the graph will be?

After you have completed 10 more coordinates, connect the dots in the order you plotted them. Can you tell what I am?

Name: _____

Date: _____



Biography: Maria Sibylla Merian

Maria Sibylla Merian was born in 1647 in Frankfurt, Germany. When she was 13 years old, Maria Sibylla Merian began to draw and write about insects and other animals in a journal. She caught insects to observe them and learn more about their habits. M.S. Merian made the first scientific drawings of insects and plants. When she grew up she continued to study insects and where they live.

Rather than follow the procedure of scientists of her time and work from dead preserved specimens, M.S. Merian collected, raised, and observed living insects. Her work places her among one of the first naturalists that observed live insects directly.

M.S. Merian was the first person to observe and record the metamorphosis of butterflies. She traveled to South America and learned about plants and animals that were unknown in Europe. She published many books about plants and insects with beautiful color drawings. She became a well known artist and naturalist. Many scientists use her drawings and words to learn more about caterpillars, other insects, animals, and plants.



“In my youth, I spent my time investigating insects. At the beginning, I started with silk worms in my hometown of Frankfurt. I realized that other caterpillars produced beautiful butterflies or moths, and that silk worms did the same. This led me to collect all the caterpillars I could find in order to see how they changed.”

(forward from *Metamorphosis of the Insects of Surinam*)



.....

advantage - An advantage is when an organism has a superior or greater ability for survival.

affect - To affect is to cause a change or influence on plants, animals, and their habitats.

beneficial (helpful) - Beneficial interactions result in both organisms in the relationship having a helpful result of the interaction.

building material - Building material refers to the nutrients, minerals, and proteins necessary for organisms to grow and maintain good health.

camouflage - Camouflage is the hiding or disguising of something. The outer covering of animals may be used as camouflage for hiding from a predator or prey.

coloring and markings - Coloring and markings of organisms refer to the specific color and markings that are visible on the outer coverings of animals.

compare - Compare is to recognize the similarities of organisms or objects.

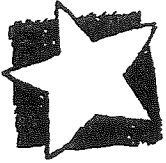
consumer - A consumer is a living thing whose food comes from other living things.

contrast - Contrast is to recognize the differences between organisms or objects.

coordinates - Coordinates are points on a map or grid used to locate a specific place or area.

decomposer - A decomposer is a living thing that breaks down waste and plant and animal remains for its source of energy (food).

dependence - Dependence in ecosystems is the reliance upon the survival of other organisms for the requirements for life.



Key Terms (cont.)

ecosystem - An ecosystem is a community of organisms and interactions within the community.

environment - An animal's environment is its total surroundings; all the living and nonliving elements or conditions that affect an animal's life, including other animals, plants, climate, water, light, and air.

evidence - Evidence is data or fact that provides proof that something is true or factual.

food chain - A food chain describes the way food passes from one organism to another. One organism is dependent on another for food.

food web - A food web describes the way food passes from multiple organisms to other organisms. The food web includes more than one source of energy for the different organisms that live in the same environment.

habitat - A habitat is the place where a plant or animal finds its needs to survive.

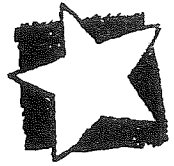
harmful - Harmful interactions result in one organism in the relationship that is hurt or dies as a result of the interaction.

individual differences - Individual differences refer to differences in the characteristics of organisms of the same kind or species.

interaction - Interaction refers to the relationship or actions between organisms in a habitat.

invasive species - An invasive species is any plant or animal that has been introduced to an ecosystem that is not native to that ecosystem. Invasive species do harm to the natural balance of the ecosystem.

invertebrates - Invertebrates are animals without a backbone. Most invertebrates also have a soft body or an exoskeleton.



.....

location - Location refers to a place fit for an animal to live. Some animals move to a new location.

migration - Migration is the moving from one location to another. Animals migrate due to seasonal changes and food supply.

natural balance - Natural balance in nature refers to the steady condition of organisms in an ecosystem.

nesting - Nesting refers to the period when animals build nests, lay eggs, and for some, tend to the eggs.

organism - An organism is a living thing. Plants and animals are organisms.

physical characteristics - Physical characteristics are the physical appearance and body structures of an organism (size, color, shape, body covering).

population - The population of an ecosystem is made up of all organisms, plants, and animals.

predator - A predator is an animal that hunts and eats other animals.

prey - Prey is an animal that is hunted and eaten by other animals. Some animals are both predators and prey.

producer - A producer is an organism that makes its own food. Plants are producers.

reproduction - Reproduction is the production of offspring or babies.

requirements for life - Requirements for life are the different things that organisms need to survive.



Key Terms (cont.)

source of energy - Source of energy refers to the food supply by which an organism maintains its ability to survive. Animals use food as a source of energy that enables their bodies to make the building material for growth and repair. Plants use energy from the sun to make their own food that enables them to make the building material for growth and repair.

survive - To survive is to remain alive (to keep on living).

variation - Variation is a difference or change in the appearance, form, or position of something.

vertebrates - Vertebrates are animals that have a backbone. Common characteristics found in vertebrates include fur, scales, feathers, quills, horns, claws, beaks, skeletons, and muscles.