

## 'Slither On' Habitat Game

**Pillar: Active Living**

**Division: I**

**Grade Level: 3**

**Core Curriculum Connections: Science and Math**

### I. Rationale:

This is an interactive game which allows students to understand and appreciate the importance of habitats. Students will demonstrate an awareness that animals require different habitats in order to meet their basic needs of food, water, shelter, and space. This particular game focuses on the importance of habitat to the eastern Mississippi rattlesnake. Students will observe what happens to a rattlesnake population when the needs for survival are removed from its habitat by graphing and interpreting the results of the game. Students will recognize that habitat preservation can help maintain animal populations, and that their actions can assist in preserving these habitats.

### II. Activity Objectives:

*Students will be able to:*

- illustrate their understanding of habitats, adaptations, and habitat preservation by assuming the role of an animal and participating in an active game.

### III. Curriculum Outcomes: Grade 3 Math and Science

Science - Topic E: Animal Life Cycles	Mathematics - Statistics and Probability
6. Demonstrate awareness that animals require different habitats in order to meet their basic needs of food, water, shelter and space	<b>General Outcome</b> Collect, display and analyze data to solve problems.
7. Recognize adaptations of a young animal to its environment, and identify changes in its relationship to its environment as it goes through life	<b>Specific Outcomes</b> 1. Collect first-hand data and organize it using: <ul style="list-style-type: none"> <li>• tally marks</li> <li>• line plots</li> <li>• charts</li> <li>• lists</li> </ul>
9. Recognize that habitat preservation can help maintain animal populations, and identify ways that student actions can assist habitat preservation	2. Construct, label and interpret bar graphs to solve problems.

#### IV. Materials:

- Hula hoops (ensure three students per hula hoop)
- Four large containers
- Coloured paper cut into small pieces to represent food
- White paper cut into small pieces to represent water
- Large playing area

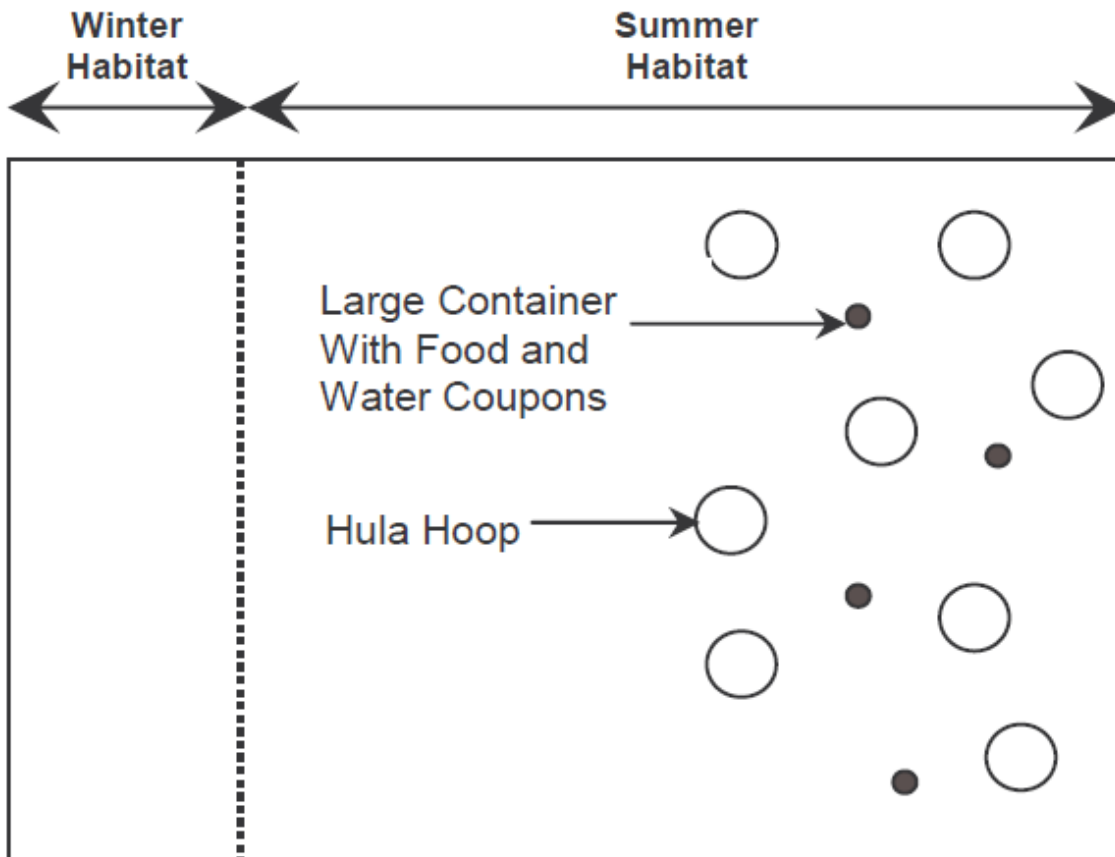
#### V. Procedure:

##### **Introduction:**

1. Review the elements that living things need to survive – food water, shelter and space. Ask what happens if one or all of these elements are removed from the habitat of a plant or animal?

##### **Activity:**

1. Arrange the playing area similar to the diagram below. Ensure there is one hula hoop for every three students and one piece of coloured and white paper per student (e.g. For a class of 24 students, you will need 8 hula hoops, 24 pieces of coloured paper and 24 pieces of white paper).
2. Each round represents a year in the life of a rattlesnake, demonstrating its migration from winter to summer habitats. In each round, the rattlesnakes must emerge from their winter habitat and cross the playing area to find shelter (hula hoops), food (coloured paper) and water (white paper). If they do not have all three elements they do not survive.
3. Follow the game commentary for teacher's instructions.



## **ROUND 1 – No Changes to Habitat**

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### **I. Winter Habitat**

**a. Read the following to the students:**

You are all young eastern massasauga rattlesnakes. It is wintertime and you all lay deep inside rock crevices, roots of trees or even old animal burrows, sheltered from the freezing temperatures and safe from dangerous predators. You have not eaten all winter because you found enough food last summer to sustain yourself during hibernation, but now you are very hungry. You look forward to visiting your summer habitat where you find lots of mice and other small mammals to eat. The moisture deep underground gives you all the water you need, but you imagine the fresh taste of water from a swamp or pond and even the dew on grass in your summer habitat.

Slowly the ground above you begins to thaw from the warm sun and you decide to emerge from your winter habitat. You know that it will be a long journey to your summer habitat. You only hope that there is enough space to get there and even when you do, you know how difficult it is to find shelter, food and water – the things you need to survive.

You begin your journey...

- b. Have students move to the summer habitat to find food, water and shelter.** (Note: Remind students that there can only be three snakes per hula hoop and that, although there are plenty of food and water coupons, they will only need one to survive the season.)
- c. Students who do not have all three elements do not survive and must move to the side of the playing area.**
- d. Count the number of snakes that survived (should be all students).**

### **II. Summer Habitat**

**a. Read the following to the students:**

All of you have made it safely to your summer habitat. Some of your summer habitats are marshes, some grasslands, and some are open, rocky areas called alvars. You think to yourself how lucky you are to have a summer habitat with plenty of shrubs, long grass, rocks and logs that provide shelter from weather and predators. Thankfully these areas had enough food and water for you to survive this year.

You see winter approaching again and as the temperatures get colder you must make the journey back to your winter habitat.

- b. Have students put food and water coupons back into containers and return to their winter habitat.**
- c. Remove two hula hoops from the playing area to represent the loss of shelter in the next round.** (Note: Keep the hula hoops out of the playing area for the remainder of the game.)

## **ROUND 2 – Loss of Shelter**

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### **I. Winter Habitat**

**a. Read the following to the students:**

Once again you are all safe in the shelter of your winter home and have enough food and water to sustain yourselves during the winter. It is another long winter, all alone, deep inside rock crevices, roots of trees, and animal burrows.

The ground above you begins to thaw and you peak your head out to see if spring has arrived. Just as your head emerges from the hole in the ground, you see your neighbour Dora the Deer running toward you. She looks scared and it seems that she doesn't see you. Although you are tired and sluggish from hibernating, you give a loud rattle to tell her you are there. She stops and looks down at you and says, "What are you going to do, my slithering friend? Part of our home is gone. A big machine came and destroyed the area where you spend the summer. There are no shrubs, long grass, rocks or logs anywhere to be found. What will we do?"

And as quickly as she came, Dora leapt off into the forest to look for a new summer home. You think about what she told you and decide that your only option is to look for yourself. You know that you can't survive without shelter but you only hope that there is still something which can protect you from bad weather and predators.

So, tired and scared you emerge from your winter shelter and make the journey to your summer home.

**b. Have students move to the summer habitat to find food, water and shelter.**

**c. Students who do not have all three elements do not survive and must move to the side of the playing area.**

**d. Count the number of snakes that survived (4-6 snakes will not survive).**

### **II. Summer Habitat**

**a. Read the following to the students:**

Not all of you survived. Some of you arrived to your summer habitat and found that all of the shrubs, long grass, rocks and logs that provided shelter were all gone, just like Dora said. There was nothing in your summer habitat to provide shelter from weather and predators.

Those of you who did survive made it safely to your summer habitat and found enough shelter, food, and water to survive. However after a long summer, you see winter approaching again and you must make the journey back to your winter habitat.

**b. Have students put food and water coupons back into containers and return to their winter habitat.**

**c. Remove four food coupons from various containers to represent the loss of a food source in the next round. (Note: Keep these coupons for the remainder of the game.)**



## **ROUND 3 – Loss of Food Source**

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### **I. Winter Habitat**

**a. Read the following to the students:**

Those of you that survived the season are safe in the shelter of your hibernacula and have enough food and water to sustain yourself for another winter. You think about your friends that didn't survive and hope that there are no more changes to your habitat.

After another long winter, the ground above you begins to thaw and you peak your head out to see if it is safe to move to your summer habitat. All of the snow has melted and you lay in the sun for a while to warm your body. All of a sudden you see your neighbour Oliver the Owl swoop past and hit a tree right beside you. You ask, 'Oliver! Are you okay?'

Oliver shakes his head and looks down at you. 'Oh, I'm sorry but I am so tired. Ever since those humans turned that grassland into a farm over there, all of the mice that I eat are all gone. So now I look for a new home during the day and a bite to eat at night. Wait, isn't that where you find food during the summer also? What will you do?'

And just as he came, Oliver flew away, bumping into trees along the way. You think about what he told you and decide that your only option is to look for yourself. You know that you can't survive without food but you only hope that there is still enough of your habitat left to provide you with the water you need.

So, afraid of what you'll find you make the journey to your summer home.

- b. Have students move to the summer habitat to find food, water and shelter.**
- c. Students who do not have all three elements do not survive and must move to the side of the playing area.**
- d. Count the number of snakes that survived (4 snakes will not survive).**

### **II. Summer Habitat**

**a. Read the following to the students:**

Not all of you survived. Four of you arrived to your summer habitat and found that the part of your habitat that provided you with food was gone.

Those of you who did survive made it safely to your summer habitat and found shelter, food, and water. However after a long summer, you see winter approaching again and you must make the journey back to your winter habitat.

- b. Have students put food and water coupons back into containers and return to their winter habitat.**
- c. Remove four water coupons from various containers to represent the loss of a water source in next round. Keep these coupons for the remainder of the game.**

## **ROUND 4 – Loss of Water Source**

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### **I. Winter Habitat**

**a. Read the following to the students:**

Those of you that survived the season are safe in the shelter of your hibernacula and have enough food and water to sustain yourself during the winter. You think about your friends that didn't survive and hope that there are no more changes to your habitat.

Once again, the ground above you begins to thaw and you peak your head out to see if it is safe to move to your summer habitat. All of the snow has melted and you lay in the sun to warm your body. All of a sudden you hear something in the nearby bushes and see your neighbour Billy the Beaver come wandering through the forest. 'Hey Billy! What are you doing wandering around the forest?'

Billy looks at you with a sad look in his eyes. 'It's all gone! Someone built a dam bigger than I could ever imagine creating. The dam is so big that it is stopping any water from coming into the marsh where we get water in the summer. I'm going to find a new marsh, but what are you going to do?'

And just as he came, Billy crawled away into the forest to look for a new summer home. You think about what he told you and decide that your only option is to look for yourself. You know that you can't survive without water but you only hope that there is still enough of your habitat left to provide you with the water you need.

So, tired and scared you make the journey to your summer home.

**b. Have students move to the summer habitat to find food, water and shelter.**

**c. Students who do not have all three elements do not survive and must move to the side of the playing area.**

**d. Count the number of snakes that survived (4 snakes will not survive).**

### **II. Summer Habitat**

**a. Read the following to the students:**

Not all of you survived. Four of you arrived to your summer habitat and found that the part of your habitat that provided you with water was gone.

Those of you who did survive made it safely to your summer habitat and found shelter, food, and water. However after a long summer, you see winter approaching again and you must make the journey back to your winter habitat.

**b. Have students put food and water coupons back into containers and return to their winter habitat.**

**c. Select two students to represent cars in the next round, demonstrating the loss of space. Have the cars move in the area between the winter and summer habitat, tagging up to three snakes each.**

## **ROUND 5 – Loss of Space**

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### **I. Winter Habitat**

**a. Read the following to the students:**

Those of you that survived the season are safe in the shelter of your hibernacula and have enough food and water to sustain yourself during the winter. You think about your friends that didn't survive and hope that there are no more changes to your habitat.

Once again, the ground above you begins to thaw and you peak your head out to see if it is safe to move to your summer habitat. All of a sudden a car whizzes by your head. It just missed you. 'What happened?' you think to yourself.

While you were cozy underground this winter, a road was being built almost right on top of you. The space between your winter habitat and your summer habitat is almost all gone. You just hope that there is enough space to find a way to your summer habitat without being hit by a car.

So, afraid of the treacherous road crossing, you begin the journey to your summer home.

**b. Have students move to the summer habitat to find food, water and shelter.**

**c. Students who are tagged by the cars do not survive and must move to the side of the playing area.**

**d. Count the number of snakes that survived (up to six snakes will not survive)**

### **II. Summer Habitat**

**a. Read the following to the students:**

You all made it safely to your summer habitat and found shelter, food, and water. Now you see winter approaching again and you must make the journey back to your rock crack, tree root, or animal burrow in your winter habitat. Congratulations to those of you who managed to live a long and happy life but sadly there were many who were not as fortunate.

**b. Debrief the activity and discuss how changes in the habitat of the eastern massasauga rattlesnake affect the population.**

## **VI. Extensions and Variations:**

- After the game, list and tally the number of survivors for each round of the game and arrange that data into a chart. Have students construct and label a bar graph that displays the changes in the rattlesnake population each round and correctly identifies when each change to the habitat occurred.

## **VII. Assessment Ideas:**

- ***A Year in the Life of a Rattlesnake:*** Have students create a comic strip based on one round of the game they just played. Remind them that each round represented one year in the life of a rattlesnake, demonstrating its migration from winter to summer habitats. The students must describe one of the changes to the habitat (loss of space, food, shelter, or water) and illustrate the impact this had on the rattlesnake population.

## **VIII. Source:**

- Adapted from Parks Canada - Species at Risk [www.pc.gc.ca/nature/eep-sar/index\\_e.asp](http://www.pc.gc.ca/nature/eep-sar/index_e.asp)