

# Eagle Bluff Olympics

## Concepts:

1. Competition exists in the natural world and impacts animals' survival.
2. Physical activity combined with mental creativity helps students learn and solve problems.
3. Competition can motivate learning and promote group bonding.
4. Competition enables improvement rather than proof of superiority.

## Outline:

### **I. Preparation Before Class (30 min.)**

### **II. Introduction (10 min.)**

- A. Greeting, Grabbing, and Purpose
- B. Names and Introductions
- C. Class Description
- D. Behavior Guidelines
- E. Task Analysis/Learner Assessment

### **III. Competition (5 min.)**

### **IV. Calorie Point System (5 min.)**

### **V. How to Play (5 min.)**

### **VI. Physical Games (20 min.)**

- A. Wheel Barrow Race/Relay
- B. Rock-n-Roll
- C. Thumb Wrestle
- D. Three Legged Race
- E. Tug-O-War
- F. Human Tricks Obstacle Course
- G. Whistlin' Crackers

### **VII. Logic Games (20 min.)**

- A. Animal and Plant Charades
- B. Transmogrifications
- C. Test your Logic
- D. Mushroom Mix-up

### **VIII. Nature Related Games (20 min.)**

- A. Guess who, Animal Taboo
- B. Nature Mysteries
- C. Key a Tree
- D. Mix and Match - Animal Tracks

**IX. Conclusion (5 min.)**

**X. Clean Up (15 min.)**

**XI. Fact sheet**

**XII. Appendix**

A. Equipment

B. Glossary

C. Class and Safety Management

D. References/Resources

E. Answer Sheets

# Eagle Bluff Olympics

## I. Preparation Before Class

Pick an area on campus that you will use for your “playing field.” Eagle Bluff Olympics can be done either outside in an open area or in a large classroom. Classes typically meet in the Discovery Center auditorium (room 20) or activity room (room 10). The lawn by the dormitory luggage rack works well for outdoor activities. The size of the field may depend on the age and maturity of your students. Choose well-defined boundaries so that the students cannot go where they will be out of the instructor’s sight.

Review the lesson plan before teaching class. Meet with the liaison to discuss any questions you may have. Your liaison will place the Eagle Bluff Olympics kit, scoreboard, and hula hoop in the room where you will be starting. Typically, there are more activities than the hour-and-a-half class length will allow. Know which activities you will be doing with your students. Be familiar with the rules of each game and how to use the equipment. Some of the activities should be done in the classroom and other events may be done outside or in a large, open indoor area. Decide upon an order of events that minimizes time wasted by alternating between indoor and outdoor activities.

Tip: If two or more teachers and/or adult chaperones are available one can lead an activity while the other can prepare to lead the next activity. This “tag-team” approach can help Eagle Bluff Olympics run smoothly.

## II. Introduction

**A. Greeting, Grabbing, and Purpose.** You will be hosting the Eagle Bluff Olympics opening ceremony. Divide the students into animal teams - Turkey Vultures, Short-tailed Weasels, Star-nosed Moles, Timber Rattlesnakes, and Spring Peepers. Attempt to assign even numbers of students to a team, also an even number of teams works best. Once the groups are divided, the instructor tells the students that the games will begin with a competition to see who can do the most jumping jacks in one minute. Have the students participate and time the activity with the stopwatch provided in the kit. Depending on the individual students, they will attempt this first event with varying effort. Some will be extremely competitive, while others will not.

Review the results of the contest. Explain to students that it is perfectly normal to see very different reactions to competition. Some people are driven by competition and perform their best under pressure, while others may go out of their way to avoid it.

**B. Names and Introductions.** Introduce yourself and become familiar with each student. (Be creative: learn all of them at once or a few at a time. Use a method that suits your style.) Explain that you will be teaching the group, and the other adult chaperones will be assisting you.

**C. Class Description.** During this class, students will be engaging in competitive activities that will challenge their physical and mental skills. They will need to work together well with their

teams and draw on the strengths and skills of their teammates to successfully meet the challenges before them.

**D. Behavior Guidelines.** Discuss clearly and specifically which behaviors you expect from your students during the class. Explain the need for respect: for you, for each other, ideas, for Eagle Bluff itself, and the equipment.

**E. Task Analysis/ Learner Assessment.** Has anyone participated in a competitive event before? What are some ways that humans compete? What are some ways that animals compete?

### **III. Competition**

Competition occurs naturally in the environment. Competition takes place when the supply of a desired resource is less than the demand for the resource. For example, if there was one candy bar here and all of you wanted it, the demand is greater than the supply, and there would be competition for the candy bar. Animals, including humans, compete for the resources they need for survival.

In times past, humans spent the majority of their time engaged in securing their survival by farming, hunting, gathering food, building shelters, and trying to stay warm. If a person was not successful, death would soon follow. Today, most people in wealthy countries like the United States no longer face the same life or death consequences when competing for resources. The structure of our society offers complex support systems and no one person is solely responsible for attaining all the resources necessary for their own survival. We all contribute, directly or indirectly, to provide resources for the whole. Today, we compete for who can produce and attain resources in the most efficient manner and create a better quality of life.

Animals, however, still spend the majority of their lives engaged in activities basic to their survival: hunting and foraging for food, defending territories, finding a mate, keeping warm, and creating and caring for the shelters they live in. If they are out-competed by any other animals for resources that are vital to their survival, they will die. Competition greatly impacts all animals' lives.

Today, we are going to be competing for the survival of our animal teams. Each event in the Eagle Bluff Olympics should be seen as an activity in which the team must compete to ensure the survival of their animal. The better each team competes, the greater the chance that their animal survives. Teams not only compete with each other, but also, they must draw on the skills of their teammates to meet each challenge to the best of their ability to help their animal survive.

Differences often exist between simply doing an activity versus competing. When faced with competition, some people become more motivated and put more effort into their actions. Others may feel more nervous or intimidated by competition. Some people experience increased loyalty to their team while competing with other teams. Explore various aspects of competition that the students have experienced like the role of motivation, fear, excitement, team loyalty, etc.

While competing, the desire to win can contribute to increased frustration, especially when one

team is not doing as well as another. Explore ways for students to deal with frustration. For example, keeping perspective sometimes helps decrease frustration. Remind students that this is only a game and how well they do does not reflect on them personally. Also, adding humor to the games can be helpful. If you sense increased frustration, take a time out: tell a joke, or a funny story.

Discuss students' ideas of "good sportsmanship". Ask the students to set up guidelines for their behavior during the competition. These should include: no name calling, no swearing, no "booing" other teams, and no cheating.

#### **IV. Calorie Point System**

All animals require energy from the food they eat to survive. Animals are continuously using up the energy they gain from foods to maintain their bodies, hunt, escape predators, mate, and even sleep. This energy is measured in calories (a unit used to measure energy) to make it easier to understand and compare. If an animal is repeatedly unsuccessful in catching its prey or foraging for food, it will continue to lose calories. If the calories are not replenished, this can leave the animal weak, sickened, injured, or dead. Animals successful at finding food will be healthier because they are gaining calories. In Eagle Bluff Olympics, each team will monitor the health and survival of their animal.

Each activity requires using a certain amount of calories in order to participate - just as it requires energy for animals to hunt and forage. Winning an activity will give the team a certain amount of calories just as an animal gains energy by eating. Each team will start with 500 calories. At the end of the Olympic Games, each team can compare the number of calories they have to the chart below to find out how healthy their animal is. Points can be totaled on the Olympics scoreboard included with the kit.

**500 - 400 = healthy and strong animal**  
**399 - 300 = average health animal**  
**299 - 200 = weakened health but surviving animal**  
**199 - 100 = sick or injured animal**  
**99 - 0 = dead animal**

*Assessment:* Competition exists in the natural world and impacts animals' survival.

- Ask the students to list three resources that animals compete for in nature.
- Ask the students to recall a time when they had to compete for something. Was the object that they were competing for necessary for their survival?
- Is it difficult for most humans to find calories (food) in their life? Have the students compare their answer to the difficulties that animals face.

#### **V. How to Play**

The order of activities can be determined two different ways. One way is to have the instructor select which games will be played, and in what order. The other way to play is to have teams take turns randomly (and blindly) picking from the envelope of "Olympic Game Titles" to

determine which event will be played next. The second method is similar with the randomness in which competition occurs in an animal's life. After an event is selected, read the description of it below and follow the directions. All equipment needed for the events can be found in the gray tub marked "Eagle Bluff Olympics." At the end of each event, read the correct answers and assign appropriate scores to each team. Teams that tie on any event must divide the calories earned equally between them. At the end of the Olympics, add up each team's points and have them assess how well their animal survived.

If there is an uneven number of students or teams, some of the activities may have to be modified to ensure fairness and maximum student participation. For example, if there is an odd number of students on one team, and the team is working in pairs during an event, one student may have to compete a second time, paired with the student that has not had a chance to participate.

## **VI. Physical Games**

**A. Wheel Barrow Relay.** Within each team, have the students form pairs. Space the two blue or green ropes provided 15-20 feet apart from each other, making start and turn-around lines. Instruct the first set of partners from each team to assume the wheelbarrow position (One student will "walk" using their hands as their partner holds their feet up and walks behind them). The partners will race down to the end rope where they will switch positions, turn around, wheelbarrow back to the starting line, and tag off to the next set of partners. The team that finishes the course first wins.

Cost: 50 calories Gain: 100 calories

Equipment: blue or green ropes to mark starting and ending lines

**B. Rock-n-Roll.** Place the included blue or green ropes about 50 feet apart from each other. Half of each team should begin at each rope. The first team member will use their nose to roll the tennis ball from one rope to their teammate waiting at the opposite rope. This continues until all teammates have rolled the tennis ball across the space. The team whose tennis ball reaches the rope first, wins. If you have an odd number of participants in a team someone may need to go twice. Caution students to avoid nosebleeds!

Cost: 30 calories Gain: 60 calories

Equipment: blue or green ropes to mark starting and ending lines, tennis ball for each team

**C. Thumb Wrestle.** Instruct the students to form two even lines, facing one another. Each person should be facing someone from another team. Have the competitors assume the thumb wrestling position and on the instructor's "Go," they will thumb wrestle. (No arm movement is allowed. To keep students from using their arms, have them use their free arm to cross over their chest and hold their thumb wrestling arm by their side.) The team with the most victories wins.

Cost: 20 calories Gain: 40 calories

Equipment: none

**D. Three Legged Relay Race.** Mark the starting and finishing lines with the blue or green rope placed 40-50 feet apart. Within each team, have the students find a partner. Using the short blue webbing from the kit, have the first pair tie their inside legs together. The first partners on each

team will run down to the finish line, turn around, and race back to the starting point. Then they help tie the legs of the next pair of partners together, and the next pair races. The first team to finish the relay wins. If there is an odd number of people on a team, one teammate will pair up with them and race again.

Cost: 50 calories Gain: 100 calories

Equipment: blue or green ropes to mark starting and ending lines, short blue pieces of webbing

**E. Tug-O-War.** Have two teams take opposite ends of the orange rope. Place a bandanna on the ground to mark the halfway point. At the instructor's "Go," each team will attempt to pull the other across the red bandanna. The first team to pull any member of the opposite team across the bandanna wins, and will go on to compete with the winner of the next match. If there is an odd number of teams, decide which one will sit out each round (coin toss, pick a number, etc.). The final winning team receives the calorie points.

Cost: 30 calories Gain: 60 calories

Equipment: orange tug -o-war rope, red bandanna

**F. Whistlin' Crackers.** One member from each team will attempt to chew 5 saltine crackers and whistle: "Mary had a Little Lamb." The team member to get the crackers in their mouth first and whistle most clearly, wins. The instructor determines who wins. This activity should always be done outside.

Cost: 10 calories Gain: 20 calories

Equipment: crackers

**G. Human Tricks Obstacle Course.** Each team will choose 1 member to run the obstacle course. The remaining team members will directly assist, and give directions to the competitor on the course. One assistant will be positioned at each of the stations of the obstacle course. The rest of the team members will be spread out along the obstacle course to cheer, protect competitors from straying too far off the course, or getting hurt. Time the race with the stopwatch provided. One team must complete the course before the next team goes.

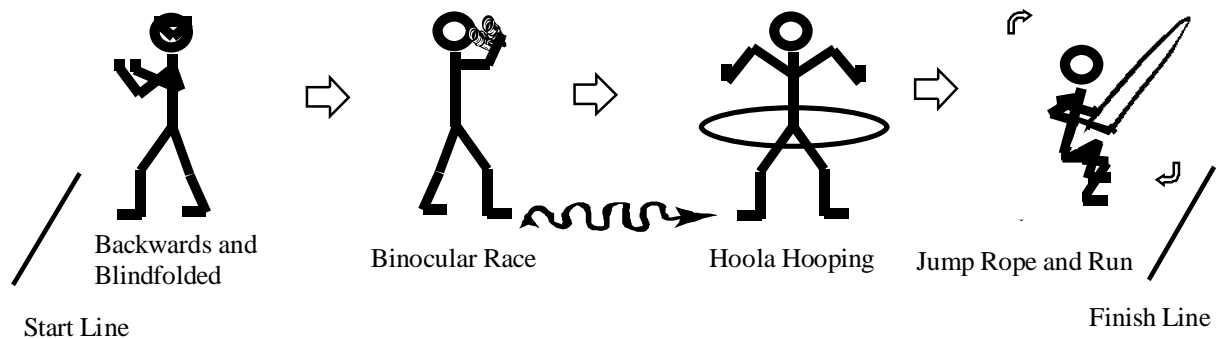
Cost: 50 calories Gain: 100 calories

Equipment: blindfold, binoculars, blue or green ropes, hoola-hoop, jump rope, stop watch

The four stations are as follows:

- 1. Backwards and blindfolded.** The obstacle course begins with the competitor walking backwards and blindfolded from a designated starting line to the beginning of the beginning of the second event on the course (15-20 feet away). An assistant may help guide the competitor with verbal prompts.
- 2. Binocular race.** The competitor will remove his/her blindfold and look through a pair of binoculars backwards, through the large lenses, and follow a curvy rope towards the next obstacle. Their feet must stay on the rope as they follow it. At the end of the rope, the assistant then takes the binoculars and the competitor runs to the next event.
- 3. Hoola hooping.** The competitor is then handed a hoola hoop and must hoola hoop it around any body part for a total of 5 circles.
- 4. Jump rope and run.** The next assistant hands the competitor a jump rope that they will use to jump rope

while running to the finish line about 30 feet away.



**Assessment:** Physical activity combined with mental creativity helps students learn and solve problems.

- As the students compete, identify the methods that they use to solve the problems. Are they just using physical methods or creativity as well?
- Have the individual students evaluate their role in their groups. For example, did they contribute more physical ability than creativity? Or vice versa?
- Can the students think of a time when they could use creativity to assist them with common problems?

## VII. Logic Games

**A. Animal and Plant Charades.** In the envelope labeled “Animal and Plant Charades,” you will find cards with the names of certain animals and plants on them. Team members will select one card at a time, and are allowed three minutes to act out as many organisms as they can correctly guess. The actors may not talk but can do “sounds like,” number of words, and number of syllables in words, just like the game charades. When a student correctly guesses the organism, he or she will pick a new card from the envelope and act it out. At the end of three minutes, the other team goes. Each team will complete the event separately. Decide which team will go first. The number of calories gained is the number of correctly guessed animals or plants times 5.

Cost: 15 calories Gain: variable

Equipment: cue cards, stop watch

**B. Transmogrifications.** According to Webster’s Dictionary, the word “transmogrify” means “to change or alter, often with grotesque or humorous effect.” In this event, the typical wording of well-known cliché’s and common expressions has been altered. Using the dictionaries provided, the students have to determine which cliché the sentence is describing.

Give examples:

“Scintillate, Scintillate, asteroid minific” = Twinkle, twinkle, little star

“Neophytes serendipity” = Beginner’s luck

In an envelope labeled, “Transmogrifications”, you will find two color coded sets of cliché’s and



their corresponding transmogrification. The cliché's are numbered and the transmogrifications are lettered. Give each team a set of same colored cards and a dictionary. Each team will have 5 minutes to match them. The number of calories gained by each team is the number of correctly matched cards times 5.

Cost: 15 calories Gain: variable  
Equipment: cue cards, dictionaries, stop watch

**C. Test Your Logic.** In the envelope labeled “Test Your Logic,” you will find laminated flash cards with four words listed on them. The first three words are related in some way, and the fourth bold word tells how they are related. The competitors need to discover how the three first words are related to the fourth.

Examples:

Teal, Cardinal, Eagle  
**Birds**

Lettuce, Asparagus, Cucumber  
**Types of vegetables**

Have each team line up. Each team has thirty seconds to answer as many cards as possible. Start with the first student in one line. Begin the clock and read the first three words on the card. If he or she can guess the correct fourth word give the card to the student and move on to the next student in line. If the student gives up and says “pass,” put the card at the back of the stack and move on to the next student. Continue cycling through the team until out of time. When the time is up, the chaperone will do the same with the next team. Have each team count and hand in the cards they got correct. The number of calories gained by each team is equal to the number of cards they acquired times 5.

Cost: 10 calories Gain: variable  
Equipment: cue cards

**D. Mushroom Mix-up.** In the envelope labeled, Mushroom Mix-up, you will find cue cards with the following sentence and corresponding code. Students will try to decipher the code and use the wet-erase markers to write the coded message on the cue cards.

J u s t t h i n k ,    E a g l e   B l u f f   S h i i t a k e   m u s h r o o m s   w i l l   l o w e r   p e o p l e ' s  
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The students must use the cue card to decode the symbolized message...

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The first team to correctly decode the symbolized message wins.

Cost: 20 calories Gain: 40 calories  
Equipment: cue cards, wet-erase markers

**Assessment:** Competition can motivate learning and promote group bonding.

- As the groups compete, notice specifically how the team members interact within each group. Are they working effectively, or are they becoming frustrated? Why are they succeeding or struggling?
- Have the students explain a situation when their group was able to accomplish something that could not have been done by one person.

## VIII. Nature Related Games

**A. Animal Taboo.** In the envelope labeled, “Animal Taboo,” you will find cue cards. Each card states the name of an animal, followed by a list of words that describe the animal. Just like the real game, Taboo, the students cannot say the listed words but must think of alternative ways to describe the animal.

Give each team three-minutes to describe as many titles as they can correctly guess. The instructor will keep time while a member from an opposite team sees that the person describing the animal does not say a listed word. Unlike charades, no motions can be used to help describe the animal name. The students should keep both hands on the card to help them refrain from doing so. When a team guesses an animal name, have them set aside the card. The team that correctly guessed the most animal names, wins.

Cost: 10 calories Gain: 20 calories

Equipment: cue cards, stop watch

**B. Nature Mysteries.** Give each team a copy of the Nature Mysteries worksheet and a wet-erase marker. On the worksheet, there are descriptions of 12 objects found in nature. Students must determine what each object is and write down their answer in the space provided. The instructor should set a time limit based on the age and ability of students. The number of calories gained by each team is equal to the number of items correctly identified times 5.

Cost: 15 calories Gain: variable

Equipment: Nature Mysteries worksheet, wet-erase markers

**C. Key a Tree.** In the envelope labeled, “Key a Tree,” you will find eight laminated leaf drawings and five tree keys. Have all of the teams form one large circle. Put the laminated leaves in a pile in the center. Give each team a tree key, and a wet-erase marker. Explain that they will have 3 minutes to identify as many leaves as possible. After a team has keyed a leaf, they should write down the number found on the leaf drawing next to the name of the tree on their laminated key, then put the leaf back in the pile. Each correctly identified leaf is worth 5 calories. The leaves are numbered to correspond with the answer key.

Cost: 15 calories Gain: variable

Equipment: tree keys (one per team), wet-erase, leaf drawings

**D. Animal Tracks.** Animal tracks come in all different shapes and sizes. This event has the students competing to correctly identify common mammal tracks of Minnesota. In an envelope labeled, “Animal Tracks”, you will find laminated copies of animal tracks. Spread out all of the animal tracks over a 15-20 ft. area on the ground. Have the teams gather in a circle around the

tracks. The instructor will call out an animal name listed on the answer sheet provided. One member from each team will race to find the corresponding animal track. When the participants from each team think they have found the correct track, they must hold up the track and show the instructor the number on the back (which will be used to verify the correct answer as listed on the answer sheet). Teams should allow a different member to find the track each round. Teammates can help guide each other to the correct track through verbal prompts. Each time a team is the first to correctly identify an animal track, they are awarded 5 calories.

Cost: 15 calories Gain: variable

Equipment: animal tracks (numerous)

*Assessment:* Competition enables improvement rather than proof of superiority.

- Have the students explain how their team worked together. Did their teamwork improve as the Olympics continued? Ask them what they could do as a team to improve in the future.
- Have the students recall a time in their life when their involvement in a competition enabled them to improve their performance.
- How can losing a competition encourage improvement?

## **IX. Conclusion**

The role of competition has changed drastically over the course of human existence. In the past, we competed as individuals or small groups, each tending to our own survival. We then began to work together and mutually contribute to the survival of each other by trading, buying, and selling goods and services. Exchange began between people within the same town, then regions, states, and countries. Now this exchange occurs globally. Today, world citizens impact fellow human beings' lives as we share, and compete for resources.

The word competition gives us the idea that there are two sides or teams, an "us" and "them." Around the world, we are physically divided into countries and historically we have been taught to see people from different countries as members of other teams or, as "them." Yet, as technology and global communication increase, we are beginning to realize more and more that everyone on this Earth is a member of the same team.

The world we live in is growing and changing. The challenge that faces human competitors today is not necessarily survival of the individual, but rather, the survival, success, and health of the whole. Many of the environmental issues that the world faces today such as air and water pollution, species extinction, the threat of global warming, overpopulation, deforestation, and ozone depletion are global problems. People from many different countries and for many different reasons have caused these problems. However the impact of these problems will affect all of us. The solutions to these obstacles are not easy, and the only way to make them better may be for the whole world to set aside their differences and act together towards a common goal: preserving the quality of life for all living things on the planet Earth, our only home.

## **X. Clean Up**

Please put all equipment used during the games back into the bin. Place all of the cards and laminated sheets into their respective folders. Use paper towels and water from the restroom to clean the wet erase marker off of the scoreboard and any laminated sheets that were used. Erase and wash the chalkboard if it was used. Leave the kit and scoreboard in the room where you started the activity so that your liaison can return them to the kit storage room.

## **XI. Fact Sheet**

- Turkey Vultures have been known to use projectile vomit as a defense mechanism against predators. They defecate on their legs to keep cool, and their baldheads are an adaptation that allows them to be more sanitary as they eat carrion.
- The short-tailed weasel is a carnivore that will kill any available prey and store the excess. Its main sources of food are mice, voles, shrews, and sometimes baby rabbits, snakes, birds, frogs, lizards, and insects.
- The short-tailed weasel, also called an Ermine, turns all white in the winter, except for the tip of its tail.
- During the winter months, as much as 65 percent of the water in a Spring Peepers body freezes. It is protected from cell damage by a chemical called glycerol which acts as a “natural antifreeze.”
- A Spring Peeper’s color will change with temperature. A colder frog is a darker color and a warmer one, lighter.
- Spring peepers can be identified by their small size and a characteristic “X” marking found on their back.
- Mosquitoes are one of the most common and well-known insects. They are found in a wide range of places.
- Mosquito larvae are aquatic and some species have a breathing tube located on the posterior end of their body, allowing them to stay under water longer.
- The largest Timber Rattlesnake found in Minnesota was 53 inches long.
- Timber Rattlesnakes feed on mice, shrews, moles, rats, chipmunks, squirrels, young rabbits, and sometimes small birds, insects, and amphibians.
- Until 1989, bounties were paid by local governments to rattlesnake hunters in Minnesota until a bill was passed that repealed the bounties.
- Shiitake Mushrooms are grown here at Eagle Bluff. This project began as an experiment to find alternative uses for forest products and sources of income for forest landowners. The mushrooms are grown on logs from the Ironwood tree, a tree that many people have considered to be a “pest species.”

## **XII. Appendix**

### **A. Equipment List**

- Lesson Plan
- Event Title cue cards
- Eagle Bluff Olympics score board (not in kit)
- Wet-erase markers (Vis-à-vis) (6)
- Short blue webbing for three-legged relay (5)
- Blue or green ropes for marking starting and finishing lines (2)
- Tennis balls (5)
- Bandannas (5)
- Orange tug-o-war rope
- Container with saltine crackers
- Binoculars
- Stop watch
- Hoola hoop (not in kit)
- Jump rope
- Dictionaries (5)
- Animal and Plant Charade cards
- Transmogrification cue cards and answer sheet
- Test your Logic cue cards with answers on back
- Mushroom Mix-up cue cards
- Animal Taboo cue cards
- Nature Mysteries cue cards and answer sheet
- Tree Keys and answer sheet
- Laminated leaf drawings
- Laminated Animal Tracks - and answer sheet

## B. Glossary

**Calorie:** A unit for measuring heat. Used to measure the value of foods for producing heat and energy in the body equivalent to the amount of heat required to raise the temperature of one kilogram of water one degree Celsius.

**Competition:** Use or defense of a resource by one individual that reduces the availability of that resource to other individuals, whether of the same species (intraspecific competition) or other species (interspecific competition).

**Shiitake Mushroom:** Meaning "oak mushroom," an edible fungus native to Japan.

**Transmogrify:** To change or alter often with grotesque or humorous effect.

**C. Class and Safety Management.** Set clear and specific boundaries. At the beginning of each event, detail the rules and parameters for the specific activity. Reinforce positive group dynamics and monitor negativity. If an activity becomes out of control, do not hesitate to stop and remind students of rules and behavior expectations.

## D. References/Resources

"Birds, Beasts, Bugs, and Us, Activity for Environmental Education." Iowa State University Cooperative Extension Services, September 1985.

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Oldfield, Barney and Moriarty, John J. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press. Minneapolis. 1994.

Ricklefs, Robert E. Ecology. W.H. Freeman and Co. New York. 1990.

Stokes, Donald and Lilian. Animal Tracking and Behavior. Little, Brown, and Co: Boston, MA. 1986.

## E. Answer Sheets

1. Answers to Transmogrifications
2. Mushroom Mix-up Answer Sheet
3. Nature Mysteries: Answers
4. Animal Tracks Answer Sheet
5. Key a Tree Answer Sheet

### 1. Answers to Transmogrifications

A=7, B=4, C=1, D=6, E=10, F=2, G=9, H=3, I=5, J=8

### 2. Mushroom Mix-up Answer Sheet

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### 3. Nature Mysteries: Answers

1. Green leaf - Small piece of a living thing that makes sugar out of sunlight.
2. Sand - Rocks no larger than 1/64 inch in diameter.
3. Pine cone - Flower from a pine tree.
4. Invertebrate - Word meaning, "no backbone."
5. Feather - Animal covering held together by hooks and barbs.
6. Butterfly, Moth, Damselfly, Dragon fly - Animal with 4 wings.
7. Any insect that flies - Insect that crawls but will turn into one that flies.
8. Acorns - Oak tree fruit.
9. Exoskeleton - Word meaning, "skeleton on the outside."
10. Water - A substance found in nature made of one part oxygen and two parts hydrogen.
11. Snow - Hexagonal crystalline structures that occur in nature as a form of precipitation.
12. Fur /hair - An outer substance that insulates mammals.

### 4. Animal Tracks Answer Sheet

1. Bobcat – golden rod
2. Snowshoe hare – blue
3. Cat – salmon
4. Coyote – green
5. Cottontail Rabbit – yellow
6. Dog – green
7. Opossum – yellow
8. Mink – salmon
9. Raccoon – purple
10. Chipmunk – golden rod
11. White-tailed Deer – blue
12. Red Squirrel – yellow
13. Gray Squirrel – green
14. Black Bear – blue
15. Porcupine – green
16. Skunk – blue
17. Otter – salmon
18. Moose – yellow
19. Mouse – golden rod
20. Beaver – blue
21. Fox – green

### 5. Key a Tree Answer Key

1. Sugar Maple
2. Quaking Aspen
3. Black Cherry
4. American Basswood
5. Green Ash
6. Northern Red Oak
7. Burr Oak
8. American Elm