

# KinderCritters Day Session

## **Purpose:**

- To provide a fun and exciting learning experience.
- To introduce young children to the outdoors.
- To explore the five senses and how they can be used to observe and interact with the environment.

## **Science Standards of Learning Addressed:**

1. See specific activity descriptions
2. K.11 – The student will investigate and understand that materials can be reused, recycled, and conserved. Key concepts include
  - materials and objects can be used over and over again;
  - everyday materials can be recycled; and
  - water and energy conservation at home and in school helps ensure resources are available for future use.

## **Outline:**

Opening (~15 mins) – Welcome, Introductions, Policies and Guidelines

Station Rotations + Lunch (~2.75 hours) (Choose from the following activities) –

1. Tree Cookies
2. Earthwalk
3. Mosquito Echoes
4. Sense Grab Bag
5. Shadow Quiz
6. Recycling!

Large Group (~30 mins) – Scavenger Hunt

Closing (~30 mins) – Sharing and Review from the Day  
Campfire Story

## **Take Home:**

KinderCritters Brochure  
Brethren Woods Summer Brochure  
Birdfeeder Instructions (Fall Season)  
Wildflower Seed Packet (Spring Season)

## **Follow-up Activities:**

Activity Sheet  
Teacher Evaluation

# Sense Grab Bag (& 12 Touches)

## Science Standards of Learning Addressed –

1. K.1 – The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
  - basic characteristics or properties of objects are identified by direct observation;
  - a question is developed and predictions are made from one or more observations;
  - objects are described both pictorially and verbally.
2. K.2 – The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include
  - the five senses and corresponding sensing organs; and
  - sensory descriptors used to describe common objects and phenomena.
3. K.4 – The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include
  - colors of objects;
  - shapes and forms of objects;
  - textures and feel of objects;
  - relative sizes and weights of objects
4. K.9 – The student will investigate and understand that there are simple repeating patterns in his/her daily life. Key concepts include
  - the shapes and forms of many common natural objects including seeds, cones, and leaves

## Supplies –

Brown paper bags filled with a variety of natural items with one item per bag.  
Egg cartons (12)

## Activity –

1. Ask students to name their five senses (seeing, hearing, smelling, tasting, and touching) and the sense organs associated with each of those senses.
2. Ask students to name some things that they might see, hear, smell, or touch today. What do they think those things will look like, sound like, smell like, or feel like?
3. Explain how important it is that we keep all of senses alert and we're going to get them warmed up with an activity.
4. Have students get into groups with adult leaders (~1:7 ratio).
5. Ask each group to send up a student to get a bag for their group and give it to their adult leader. The leader looks in the bag and each child gets to ask a yes or no question to try to guess what's in the bag. (Example: Is it green? Is it heavy?) Questions like "Is it a pinecone?" have to wait!
6. Then the leader lets each child shake the bag (no peeking!).
7. Now each child gets to smell (eyes closed!).
8. The leader lets children put their hand in to feel/touch the object.
9. Children may ask additional yes or no questions throughout the exercise.
10. Finally everyone gets to guess what the object is and then look to see if they are right.
11. When groups finish, a runner returns the bag and switches with another group. Repeat the activity 1 or 2 times as time allows, or until all groups have had every item.

## Add-On Activity –

1. If time allows, invite students to work in a group with an adult to carefully collect 12 different touches (smooth, rough, bumpy, soft, fuzzy, etc.) in an egg carton.
2. Invite groups to share something from their carton with the group or have group's trade touch cartons so they can compare what they found with another group. Be sure that each group carefully returns their items to the natural world.
3. Recollect the egg cartons for the next group.

# Tree Cookies

## Science Standards of Learning Addressed –

1. K.1 – The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
  - basic characteristics or properties of objects are identified by direct observation;
  - a set of objects is sequenced according to size;
  - a set of objects is separated into two groups based on a single physical characteristic.
2. K.2 – The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include
  - the five senses and corresponding sensing organs; and
  - sensory descriptors used to describe common objects and phenomena.
3. K.4 – The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include
  - colors of objects;
  - shapes and forms of objects;
  - textures and feel of objects;
  - relative sizes and weights of objects; and
  - relative positions and speed of objects.
4. K.6 – The student will investigate and understand the differences between living organisms and nonliving objects. Key concepts include
  - all things can be classified as living or nonliving; and
  - living organisms have certain characteristics that distinguish them from nonliving objects including growth, movement, response to the environment, having offspring, and the need for food, air, and water.
5. K.7 – The student will investigate and understand basic needs and life processes of plants and animals. Key concepts include
  - plants need nutrients, water, air, light, and a place to grow to survive;
  - plants and animals change as they grow, have varied life cycles, and eventually die.
6. K.9 – The student will investigate and understand that there are simple repeating patterns in his/her daily life. Key concepts include
  - animal and plant growth.
7. K.10 – The student will investigate and understand that change occurs over time and rates may be fast or slow. Key concepts include
  - natural and human-made things may change over time; and
  - changes can be noted and measured.

**Supplies –** Tree cookies (one per child), large tree cookie samples, markers, yarn or heavy string, scissors, tree growth poster

## Background –

Tree rings show patterns of change in the tree's life, as well as changes in the area where it grows. Students can visualize environmental and historical changes using a tree cookie, a cross section of a tree trunk.

By counting a tree's growth rings, you can tell the age of the tree. Every growth season trees add a new layer of wood to their trunk. The rings provide clues about the climate (weather) of an area over time and evidence of disturbances to or around the tree (such as fires or floods).

The shape and width of the rings often differ from year to year because of varying annual growth conditions. The greater the growth during a year, the greater the space between rings. During a moist growing season, a tree may produce a particularly wide ring. During a drought, a colder winter, or an unseasonable frost, a tree may produce a very narrow ring. Scientists have found that they can learn about past climates by studying the ring patterns of very old trees, like sequoias and giant redwoods. Other factors that can affect a tree's growth are root damage, disease, and competition from other plants. These factors can cause a tree's rings to become misshapen.

To study a tree's growth rings without harming the trees, scientists use a technique called coring. A small hole is drilled into the center of the tree trunk with a hollow instrument called an increment borer. Then a long, narrow cylinder of wood is removed. This cylinder is called a core sample and is used to count the growth rings.

## Activity –

1. Hold up a tree cookie and ask if anyone can guess why it's called a tree cookie. Explain that they are called tree cookies because of their size and shape, not because they taste good (except to termites!).
2. Use the large tree cookie samples to discuss some of the characteristics of tree cookies – size, shape, texture, color, etc. Pass the samples around on the tables so that children can look, feel, and smell the cookies.
3. Explain that you are going to hand out tree cookies (one to each person) and that they should carefully hold their cookie and use their noses to smell the cookie and their eyes to inspect it (colors, shape, texture, etc.). Hand out the tree cookies.
4. Invite students to share observations about their tree cookies. Have table groups line up their cookies from largest to smallest. Then have table groups divide their cookies into two groups based on a characteristic (light wood vs. dark wood, rough vs. smooth, smell, etc.)
5. Use the tree cookie poster to briefly talk about how trees grow. Trees are living things so they experience growth, movement, respond to the environment, have offspring (seeds), and need food, air, and water. Trees, like all plants, need nutrients, water, air, light, and a place to grow to survive. Trees, like all plants, change as they grow, experience a varied life cycle, and eventually die.
6. Ask students if they can see rings on their tree cookie. Use the large tree cookie sample and explain what those rings are. Relate the rings to a human's birthday and compare the differences in ring sizes to how humans grow at different rates over time.
7. Let students try to count the rings on their tree cookies to see how old the tree was. (Some rings on these small tree cookies will be hard to see; a safe bet is to add 3-7 years to make up for missed rings.) Invite some students to share how old they think their tree was by going around the table so each person gets a chance to share.
8. Discuss how rings also tell us about the tree's history. Describe how environmental changes impact the look of a tree's growth rings. Use the large tree samples to compare large and small rings and to show a misshapen ring that could have resulted from disease or damage. Emphasize that natural things change over time and these changes can be observed and measured.
9. Let students examine their tree cookies like scientists to try to guess the tree's history.
10. Help students to understand that we don't want to cut down a tree (and kill it!) when we want to count the rings, so foresters have developed a technique called coring. The forester bores into the tree to take out a small sample of the bark so they can count the rings.
11. Explain that we can also use tree cookies to make a special nametag to remember their field trip. Allow students to share markers to color their tree cookie and write their name on it. They can decorate both sides. When they finish decorating, instruct them to raise their hand so an adult can help them thread yarn or string through the hole and tie it to make a necklace.
12. Encourage students to keep their necklaces on and not to swing them or play with them. Also, let them know not to get their tree cookie wet because the markers may smear or run.
13. Ask students to help clean up the markers and return them to the storage containers.
14. Allow time to review the key points of the lesson and for students to ask questions.

# Earthwalk

## Science Standards of Learning Addressed –

1. K.1 – The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
  - basic characteristics or properties of objects are identified by direct observation;
  - observations are made from multiple positions to achieve different perspectives;
  - objects are described both pictorially and verbally.
2. K.2 – The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include
  - the five senses and corresponding sensing organs; and
  - sensory descriptors used to describe common objects and phenomena.
3. K.4 – The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include
  - colors of objects;
  - shapes and forms of objects;
  - textures and feel of objects;
  - relative sizes and weights of objects; and
  - relative positions and speed of objects.
4. K.5 – The student will investigate and understand that water flows and has properties that can be observed and tested. Key concepts include
  - water occurs in different phases;
  - water flows downhill; and
  - some materials float in water, while others sink.
5. K.6 – The student will investigate and understand the differences between living organisms and nonliving objects. Key concepts include
  1. all things can be classified as living or nonliving; and
  2. living organisms have certain characteristics that distinguish them from nonliving objects including growth, movement, response to the environment, having offspring, and the need for food, air, and water.
6. K.7 – The student will investigate and understand basic needs and life processes of plants and animals. Key concepts include
  - animals need adequate food, water, shelter, air, and space to survive;
  - plants need nutrients, water, air, light, and a place to grow to survive;
  - plants and animals change as they grow, have varied life cycles, and eventually die
  - offspring of plants and animals are similar but not identical to their parents or to one another.
7. K.8 – The student will investigate and understand that shadows occur when light is blocked by an object. Key concepts include
  - shadows occur in nature when sunlight is blocked by an object.
8. K.9 – The student will investigate and understand that there are simple repeating patterns in his/her daily life. Key concepts include
  - weather observations;
  - the shapes and forms of many common natural objects including seeds, cones, and leaves; and
  - animal and plant growth.
9. K.10 – The student will investigate and understand that change occurs over time and rates may be fast or slow. Key concepts include
  - natural and human-made things may change over time; and
  - changes can be noted and measured.

**Supplies** – See specific Earthwalk options

## Background –

Design an Earthwalk experience using activities below that are appropriate for the size of the group, time limit, and area of camp being used.

## Activity –

1. Explain that the group is going on an Earthwalk. An Earthwalk is similar to a hike, but along the way we'll stop to look around and do some activities. Remind everyone to keep their eyes, ears, and noses alert!
2. Set some ground rules to include: no running, staying on the path (unless otherwise instructed), staying behind the leader, and staying together as a group. Ask an adult leader to take up the rear. Please do not allow students to play on any of the cooperation course elements.
3. Possible activities and items of interest:
  - a. Terrific Trees –
    - Sassafras Tree (three shapes of leaves, let kids smell a leaf),
    - Red Bud Tree (heart-shaped leaf, bud colors),
    - Tulip Tree/Yellow Poplar (two names, leaf shape),
    - Red Maple Tree (leaf shape, stem color),
    - Evergreens (needles, # of needles in a bundle)
  - b. Rainbow Chips – Hand out 2-3 paint chips to each pair of students (“rainbow searchers”) and invite them to search for something along the trail or in the area that matches their paint chip. Encourage them to share their discoveries with another pair. Recollect paint chips in the rainbow pouch.
  - c. Mayapples – Invite students to peak under the umbrella
  - d. Stream – Observe the water near the stream. Listen to the stream flowing. Note that the water flows downhill. Where is it coming from? What lives in the stream? Ask students what materials float in water and what materials sink.
  - e. Scratch and Sniff – Along the trail, invite participants to gently scratch and sniff their way from one point to another. Ask several people to share their favorite smell. To make it even more fun, hand out “scent catchers” (that have been dipped in a “mystical solution” that helps to capture scents) from the jar. Have persons with the same color scent catcher pair up to share their favorite scent. Recollect the scent catchers to dispose of properly.
  - f. Plant and Animal Needs – Use a plant or animal you find along the trail as an example. Ask students to name the things that plants (nutrients, water, air, light, and a place to grow) and animals (food, water, shelter, air, and space) need to survive. Remind students that plants and animals change as they grow, have varied life cycles, and eventually die. If possible, demonstrate how the offspring of a plant or animal is similar but not identical to their parents or one another.
  - g. I Spy – Invite students to spy something they find interesting and share it with the group or a partner.
  - h. Living vs. Nonliving – Invite students to name or point out living organisms (like trees, plants, insects, deer, birds, etc.) and nonliving objects (like rocks, dirt, water, etc.). Remind students that some characteristics of living organisms are growth, movement, response to the environment, having offspring, and the need for food, air, and water.
  - i. Changes – Point out and observe ways that changes are taking place on the trail and around the trail. Some of these are natural changes (fallen trees, affects from flooding, etc.) and others are caused by humans (erosion on the trail). Explain how these changes can be observed and measured.
  - j. Natural Sundial – Explain that the earth is moving all the time. It is rotating around the sun and spinning around on its axis every 24 hours. How can we measure or notice that the earth is moving from here on earth? Note that the basketball court pole creates a shadow where it is blocking the sun. Ask students to put a rock on the shadow of the basketball court pole. How far will the earth move during their hike? Ask each student to get a small rock and mark where they think the shadow will be when they return. Explain that the pole is acting in a similar way to a sundial that people use to tell time.

# Mosquito Echoes

## Science Standards of Learning Addressed –

1. K.2 – The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include
  - the five senses and corresponding sensing organs; and
  - sensory descriptors used to describe common objects and phenomena.
2. K.6 – The student will investigate and understand the differences between living organisms and nonliving objects. Key concepts include
  3. all things can be classified as living or nonliving; and
  4. living organisms have certain characteristics that distinguish them from nonliving objects including growth, movement, response to the environment, having offspring, and the need for food, air, and water.
3. K.7 – The student will investigate and understand basic needs and life processes of plants and animals. Key concepts include
  - animals need adequate food, water, shelter, air, and space to survive;
  - plants and animals change as they grow, have varied life cycles, and eventually die.

**Supplies** – Plastic eggs with beans inside to be used as noise-makers, blindfolds

## Background –

Most bats develop a system of echolocation that is more sophisticated than the “sonar” used in submarines. Bats emit a series of short but high-pitched sounds through their mouths and noses and wait to hear the echo, the sound wave that bounces back from the object. Echolocation enables bats to pinpoint an insect’s specific location. Bats can zoom in on object details that are as fine as a human hair, but they avoid large objects that would not be food such as trees or buildings or people.

## Activity –

1. Invite students to share facts or information that they already know about bats.
2. Ask students if bats and mosquitoes are living organisms or nonliving objects. Ask them to name some of the differences between living and nonliving things. (Living organisms grow, move, respond to the environment, have offspring, and need food, air, and water.)
3. Bats and mosquitoes are animals. Ask students to name the basic needs of animals (adequate food, water, shelter, air, and space to survive). Remind students that animals change as they grow, have varied life cycles, and eventually die.
4. Explain that this game will help us understand how echolocation works. You can make an echo by having the group yell loudly and then stop suddenly to hear their voices bounce off of the mountain.
5. Ask students and adults to form a circle. These “trees” should hold out their hands in front of them like branches.
6. Start by choosing two players. Blindfold one to be the bat (or have them keep their eyes closed) and give both the bat and mosquito a noise-maker.
7. Each time the bat sends out a signal (by shaking their noise-maker) the mosquito must respond with an echo (by shaking their noise-maker). The bat can make as many signals as it wants.
8. The mosquito moves around the circle trying to avoid the bat, but must stay inside the trees. If the bat gets too close to the trees, the trees should whisper “tree” to indicate that the bat is near the outer circle. Trees should be as quiet as possible so that the bat can hear the mosquito. It works best to say that the mosquito may only walk (not run; though they may walk quickly) because bats fly faster than mosquitoes; otherwise, it’s very hard to catch most “mosquitoes.”
9. The round ends when the bat “eats” the mosquito and a new pair can play. The goal is for each student to be able to be a bat and a mosquito. You can achieve this by having the mosquito become the bat and have the next person in the circle be the mosquito. The first bat will be the last mosquito. You can also have two new people go each time and then switch jobs to complete their turn. It’s up to you!
10. After each student has had a chance to participate, you can make it more challenging and realistic by adding more mosquitoes or bats. You can also invite the teacher or a parent chaperone to be the bat with several students as mosquitoes.

11. Talk about how the game was like how bats use echolocation to find and eat mosquitoes and other insects. Mention that bats don't soar like birds, but are always darting around, catching their next prey.
12. What else do students know about bats?! As time allows, have more fun with the Add-On Activity!
13. Invite students to share what it was like to be blindfolded and trust others to guide you. Were the trees quiet so bats could hear? Did your sense of hearing improve?

### **Add-On Activity –**

Help the students learn more about bats by asking the following questions and having them move either left or right of an imaginary line based on their answer! (You can ask the teacher to be the other point on the line, directly across from you to form the imaginary line the students will cross.)

Move to the right if you think bats are awake during the day.  
Move to the left if you think bats are awake at night.  
**(LEFT – Bats are nocturnal, meaning that they are awake at night!)**

Move to the right if you think bats only eat one kind of food.  
Move to the left if you think bats eat lots of different things!  
**(LEFT – Bats eat fruit, insects and only three types drink blood and these are found in Africa!)**

Move to the right if you think a bat could eat more than 600 mosquitoes in an hour.  
Move to the left if you think a bat can't eat that many mosquitoes in an hour.  
**(RIGHT – A bat CAN eat more than 600 mosquitoes in an hour!)**

Move to the right if you think a bat can't see anything.  
Move to the left if you think bats have perfectly good eyesight.  
**(LEFT – Bats have great eyesight!)**

Move to the right if you think there are more than a 1,000 different kinds of bats in the world.  
Move to the left if you think there only six kinds.  
**(RIGHT – imagine that each person in your school is a different kind of bat; that's a lot!!)**

Move to the right if you think a bat can eat more every night than it weighs.  
Move to the left if you think a bat only eats a tiny amount of food each night.  
**(RIGHT – they eat more! Can you imagine eating more than you weight each day?!)**

Move to the right if you think that bats rest standing up on their feet.  
Move to the left if you think bats rest hanging upside down!  
**(LEFT – bats rest upside down during the day in caves, trees and buildings.)**

Move to the right if you think a bat can be as small as bumblebee.  
Move to the left if you think a bat can be as big as YOU!  
**(RIGHT – hold your arms straight out beside you, a bat could be THAT big with a wing span of five feet)**

Move to the right if you think bats fly around all year long.  
Move to the left if you think bats hibernate for several months.  
**(LEFT – bats hibernate from October till March.)**

Move to the right if you think bats use echolocation to move around in caves.  
Move to the left if you think bats just use their memory to know where to go.  
**(LEFT – they don't use echolocation in caves because it bounces around too much to make sense!)**

# Shadow Quiz

## Science Standards of Learning Addressed –

1. K.2 – The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include
  - the five senses and corresponding sensing organs; and
  - Sensory descriptors used to describe common objects and phenomena.
2. K.6 – The student will investigate and understand the differences between living organisms and nonliving objects. Key concepts include
  - all things can be classified as living or nonliving; and
  - Living organisms have certain characteristics that distinguish them from nonliving objects including growth, movement, response to the environment, having offspring, and the need for food, air, and water.
3. K.8 – The student will investigate and understand that shadows occur when light is blocked by an object. Key concepts include
  - Shadows occur in nature when sunlight is blocked by an object.

**Supplies –** Different shapes used to cast shadows on ground, solar model

## Background –

Shadows are created when sunlight gets blocked by an object. Shadow shape and length vary during the day, due to the position of the sun. Sometimes we can even see the shadow of the moon on the earth.

## Activity –

1. **When doing this activity, ask students during the introduction to look at the shadows around the lake area and ask them to remember where they were. Remind them to NEVER look directly at the sun!**
2. Explain to the group we are going to talk about shadows, ask the students how shadows are made (the light of the sun is blocked by an object), when you can see shadows (sunny day), and ask if they can spot a shadow from the location they are at.
3. Ask the students if they notice any difference in shadows between the time they got here and the time of this activity
4. Explain to the students that the length and shape of a shadow of an object is relative to the position of the sun. The lower the sun, the longer the shadow. That is why shadows are longer in the evenings than they are in the middle of the day.
5. Get the solar model out and ask the students if they can tell where the shadow is, and if it is long or short.
6. Place one of your shadows on the solar model and ask the students where the sun would be if the shadow is in that particular place
7. Tell the students that they are going to identify animals by their shadow. Once they recognize the animals their goal is to act like the animal.

# Recycling!!

## Science Standards of Learning Addressed –

1. K.1 – The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which a question is developed and predictions are made from one or more observations; objects are described both pictorially and verbally.
2. K.11 – The student will investigate and understand that materials can be reused, recycled, and conserved. Key concepts include
  - materials and objects can be used over and over again;
  - everyday materials can be recycled;
  - water and energy conservation at home and in school helps ensure resources are available for future use.

## Background Information-

Natural resources such as water, trees, and coal should be conserved. Recycling is one way to conserve these resources. Recycling takes used objects and turns them into new materials. Examples include turning newspaper into drawing and writing tablets, turning aluminum cans into new cans, and plastic bottles into garden furniture and clothing.

Another way to conserve is by reusing materials. Examples include using dishes and utensils that are washed after use, rather than using paper plates and plastic utensils and throwing them away after use. Recycling and reusing help to reduce the amount of trash that is thrown away and also help preserve resources for future use.

Some natural resources cannot be recycled or reused. When creating electricity or heat by burning coal, the coal is used up. It is important to conserve electricity by turning off things such as lights and computers when not in use to conserve coal and other nonrenewable natural resources used to generate electricity.

**Supplies –** Plants potted in a painted #10 can, a bag of clean garbage items (“trash”) such as glass bottles, plastic bottles, orange/banana peel, old batteries, paper, mail, plastic straws, plastic containers, paper towel tubes, egg cartons, popsicle stick, etc.)

## Activity –

1. Why is it important to recycle?
2. How does recycling work at camp? Ask students for ideas. Write ideas down on whiteboard/poster board. The kitchen uses lots of cans and containers that do not have a purpose after they are emptied. Bring a number 10 can to table and ask students what they might use this type of can for. Here at camp we could use these for flower pots! (Have sample cans painted and planted.)
3. Dump the large bag of “trash” out on the table. Ask the group for ideas of how those items could be reused, or recycled. What could you use these for? Be creative! Do any of those items look familiar?
4. Another way that recycling happens at camp is in nature. Look at all of the firewood that we use to heat camp and make fires. Where do you think it comes from? When a tree falls, we could leave it there, or we can use it for firewood!
5. When the leaves fall off of the trees, nature recycles them into dirt. So we don’t have to clean them up!
6. Go on a recycling hunt. Find things around us that can be recycled or reused!