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## Wild Time

Goals: Promote observation, exploration, and discovery to increase enjoyment and appreciation of nature. Students practice using scientific tools and recording their observations in nature journals.

Science | Writing | Math

Grades 6 - 8

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Curriculum Set: Wild Time  
Lesson 1: Outdoor Observations

Goals: Begin to break down any discomfort or fears of the outdoors and observe one's surroundings with new eyes. Explore how various scientific tools can be used to investigate nature. Understand why nature journaling is important, and practice using journaling techniques, both written and drawn, to record data.

Science | Writing

Grade 6-8

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## Total lesson time: 1 hr

Science Journals: 20 minutes

Observation Stations: 30 minutes

Journaling and Debrief: 10 minutes

## Materials needed:

Hula hoops or string large enough to make circles

Small dry erase boards or construction paper sheets

Scientific tools (e.g. magnifying glasses, rulers, tape measurers, soil corers or trowels, scale, binoculars, microscope)

Science journal supplies

## Lesson Tips:


- We piloted this curriculum with after-school groups where the students didn't already know each other well. We recommend using the ice breaker Sanctuary Bridge Building to start off the lesson.

## Science Journals: (20 minutes)

1. Explain that scientists record their observations in journals. We are also scientists that will keep track of what we learn and see during our sessions.
2. Why keep a science journal? Helps to answer how, what, and why questions. (Suggestion: Show snippets from Aldo Leopold's *Sand County Almanac*.)
3. How should you record your findings? Lists, captioned drawings, prose or poetry, tables, etc.
4. Show students how to create and decorate their own nature journal. We used this [site's](#) design.

## Observation Stations: (30 minutes)

5. Set up approximately 10 stations throughout an outdoor area. Put a hula hoop down at each station. Inside the hula hoop place a dry erase board or construction paper sheet with a number written on it to indicate the station number. Add a scientific tool.
6. Explain that we are going to practice using different scientific tools to observe the world just like a scientist. Practice making observation statements about what you can see at both a large and small scale from where you're standing (e.g. there are six puddles on the ground; this leaf on the ground has pointy tips).
7. Put the students in groups. Tell them they are to find the different stations, write the number of the station in their journal and an observation made (preferably using the tool) at that station.
8. Some groups respond well to making this a contest (i.e. find as many stations and make as many observations as possible in 20 minutes).

- 
9. If students are stuck, guide them in how they could use the tool to make an observation, or encourage them to use their five senses to make an observation about their surroundings.

### **Journaling and Debrief: (20 minutes)**

#### 10. Debrief

1. Discuss unique observations that student groups made.
2. Discuss students' methods for making observations.

#### 11. Science Journaling

1. Everyone writes the date, time, location, and weather.
2. Everyone takes time to write/draw what they learned about their surroundings, questions they have, or what they saw during the Observation Stations activity.
3. Model effective journaling by recording your own observations and sharing with the students.
4. If a student is unsure how to begin, ask them to pick a favorite animal and write the letters down the side of the page (e.g. ROBIN). Ask the student to find something they can see that starts with each letter of the word (e.g. R is for "red flowers").



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Curriculum Set: Wild Time

Lesson 2: Ornithology

Goals: Students learn how to use binoculars, identify birds by sight, and use a field guide.

Science | Literacy | Writing

Grade K-5

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## Total lesson time: 1 hour 25 minutes

What is Ornithology: 20 minutes

Bird Identification: 15 minutes

Birding: 30 minutes

Journaling and Debrief: 20 minutes

## Materials needed:

*The Birdwatchers* by Simon James

[Trivia questions](#)

Binoculars (optional)

Bird field guide

Bird pictures


Science journals

## Lesson Tips:

- You can check out bird field guides at most libraries. You can also use *Madison Audubon's Bird Guides for Kids* (donation of \$5/book) which includes 27 of the more common birds in south central Wisconsin. This book's simpler format includes fun facts and large pictures.

## What is Ornithology: Pick one activity below (20 minutes)

1. Read *The Birdwatchers* by Simon James (recommended for grade K-2)
  - a. Define ornithology
    - i. Why study birds?
      1. Determine the health of bird populations (and the populations of plant and animal species affected by bird numbers, like prey and predators).
      2. Understand ecosystem health. It can sometimes be determined with the help of bird health data.
    - ii. Covered in feathers (what are feathers used for?)
    - iii. Warm blooded (they regulate their own body temperature, the outside temperature does not)
    - iii. Birds lay eggs
  - b. What makes a bird a bird?
    - i. Covered in feathers (what are feathers used for?)
    - ii. Warm blooded (they regulate their own body temperature, the outside temperature does not)
    - iii. Birds lay eggs
2. Ask kids to each write an example on the board of how they can tell different birds apart (recommended for grade 3-5)
  - a. Review answers and discuss other potential answers to identify different bird species.
  - b. Define ornithology?

- 
- i. Why study birds?
  3. Play bird trivia (recommended for grade 3-5)

### **Bird Identification: (15 minutes)**

4. Hang up the bird pictures around the schoolyard or classroom. Some can be somewhat hidden!
5. Groups of 2 or 3 students should look for the birds and identify them with their field guide. If the students are using the *Madison Audubon's Bird Guides for Kids*, make sure to read the fun fact for each bird.

### **Birding: (30 minutes)**

6. Binocular basics
  - a. Ask the kids what tools ornithologists use to study birds.
  - b. Show kids how to focus binoculars. Remind kids to look for the bird first with their naked eye (sans binoculars) and then, keeping their eyes on the bird, bring the binoculars up to their face.
  - c. Reinforce the two binocular rules: strap stays around their neck and never walk with binoculars up to their face.
7. Take a nature walk stopping periodically to look and listen for birds. Use the bird guide to identify bird sightings.
8. Lead the kids asking how, what, and why questions about birds:
  - a. What makes a bird a bird?
  - b. How do we identify the different birds?
    - i. Field marks, size, calls, color
  - c. Why do birds live where they live?

### **Journaling and Debrief: (20 minutes)**

9. Debrief
  - a. Discuss ways that we can all help birds.
10. Science Journaling
  - a. Everyone writes the date, time, location, and weather.
  - b. Everyone takes time to write/draw what they learned about their surroundings, questions they have, or what they saw on their hike.
  - c. For grade K-2, use a larger group journal that everyone contributes towards. Hand out slips of paper for students to write their name and favorite thing they saw that day. Paste the slips in the book.
  - d. Model effective journaling by recording your own observations and sharing with the students.
  - e. If a student is unsure how to begin, ask them to pick a favorite animal and write the letters down the side of the page (e.g. ROBIN). Ask the student to find something they can see that starts with each letter of the word (e.g. R is for "red flowers").

### **RESOURCES:**





Bird Field Guides:

*Birds, Nests & Eggs (Take Along Guides)* by Mel Boring

*Birds of North America* by Kenn Kaufman

Bird Phone App:

[Merlin Bird ID App](#) from Cornell Lab



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Curriculum Set: Wild Time  
Lesson 3: Mapping

Goals: Determine what observational data is important to collect. Create an accurate, complete map and summarize highlights. Develop a simple hypothesis.

Science | Writing | Art

Grade K-5

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## **Total lesson time: 1 hr 30 min**

Introduction: 10 minutes

Mapping: 60 minutes

Debrief: 20 minutes

### **Materials needed:**

- Maps of natural/recreational areas
- Computer
- Graph paper
- Colored pencils
- Tape measure
- Compass
- Stakes/pencils/cones
- Science Journals


### **Introduction: (10 minutes)**

1. Bring in maps of different natural/recreational areas
  1. Why do we need maps? (e.g. find where something is, determine how much habitat there is and if it's increasing/decreasing over time, aerial views which gives a different perspective)
  2. What are the different ways people present information on maps? (trail maps, density maps, color, topography)
2. We are going to create our own maps today.

### **Mapping: (60 minutes)**

3. Provide students, either in small groups or individually, with graph paper, colored pencils, tape measure, and stakes/pencils/cones.
4. Students choose an area of the schoolyard and measure out a 10' x 10' square (or larger). Students should use the stakes/pencils/cones to mark the corners of their section.
5. Using graph paper and colored pencils, students outline the border, color in habitat types (pavement, buildings, grass, etc.), and draw objects (trees, bushes, benches, etc.). Students label all buildings and structures, and measure and label the distance. Title the map and add a legend.
6. Walk around helping students as needed.
7. Show students how to use a compass to add a north arrow to their map.

### **Journaling and Debrief: (20 minutes)**

- 
8. Everyone writes the date, time, location, and weather.
  9. Students write the highlights of their map in their journal.
  10. Students present a summary of their map.
  11. Guide discussion:
    1. Do you expect to see more birds/insects/mammals/plants/etc. in one section over the others? Why?
    2. Do you expect to see greater diversity, aka more species (types) of birds/insects/mammals/plants/etc. in one section over the others? Why? How is this different than just total amount of birds/etc.?
  12. With the students, develop a simple hypothesis related to diversity and habitat types based on the map discussion. Have students write their hypothesis in their journals.



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Curriculum Set: Wild Time

Lesson 4: Winter Survival

Goals: Discover the significance of limiting factors in bird population dynamics. Identify abiotic and biotic factors that impact survival rates.

Science | Math

**Grade 6-8**

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## Total lesson time: 30 minutes

Introduction: 5 minutes

Winter Survival Activity: 20 minutes

Debrief: 5 minutes

## Materials needed:

Envelopes

Pieces of construction paper (1"x1") in six colors, labeled with the following numbers:


# of Pieces	Labeled with the #
10 of each color	2
4 of each color	5
2 of each color	8
1 of each color	10

### Introduction: (5 minutes)

1. Tell the students to imagine they are scientists studying how many birds live at the Madison Audubon Sanctuaries. Ask them if they think the population will increase or decrease with the following events, and why:
  - A drought dries up the ponds and birdbaths.
  - West Nile Virus spreads to Wisconsin.
  - There are fewer insects in the area due to an increased use of insecticide.
2. Explain that the drought, disease, food, etc. are called limiting factors. The bird population will continue to increase until a limiting factor limits the population. Ask the students to brainstorm other potential limiting factors for bird populations (e.g. available space, climatic and weather conditions, predation, shelter, pollution, hunting).

### Winter Survival: (20 minutes)

3. Scatter the colored construction paper pieces around a field or gym. The color of the card represents the type of food (e.g. red for berries, yellow for insects). Each card has a number on it – this represents the number of ounces of food.
4. Explain goal of game – to survive. Blue jays collect food for winter, much like squirrels. This is called caching.
5. Explain that the pieces of paper represent different kinds of food and that the students are acting as blue jays. DO NOT tell the students what the colors or numbers on the papers mean.
6. Students each take an envelope, write their name on it, and put at the starting line. The envelope is the student's "nest".

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7. When the game begins, students can begin collecting food. Birds cannot carry a lot of food when they're flying so the students must bring back each piece of paper to their nest before going out again.
  8. When all the food is taken, have the students add the numbers on the papers they collected. Write the total on the back of their envelope.
  9. See how many students collected at least 50 ounces of food. These students survived the winter. Calculate the percentage of students that survived.

### **Debrief:**

1. What were the limiting factors in this game? What are other factors that could influence the survival of the birds?
2. How can we help birds survive the winter? (bird feeders)
3. If you added the additional challenges (below):
  - a. How did injuries affect the survival rate?
  - b. How many pounds of food did the mother bird collect? Will her chicks survive? If she didn't collect enough food, will she feed her chicks or herself first?


### **Adjust this lesson for different age groups:**

#### **Less Challenging:**

- If you would like more of the class to survive, add in the following after seeing how many students collected at least 50 ounces:
  - Madison Audubon restores a new part of a sanctuary that you find shelter at for the winter. There are plenty of seeds there from last fall's prairie planting. You only need 25 ounces to survive.
  - A kind community member puts of a bird feeder in your neighborhood. You only need 25 ounces to survive.
  - A wildlife rehabilitation center finds the injured birds (from the challenge round) and provides them with shelter and food. You survive the winter.

#### **More Challenging:**

- Assign the following roles to students:
  - Last week a feral cat chased you. You got away, but barely! The cat was able to injure your right wing and leg. When you collect food, you need to hop on your left leg and only use your left hand.
  - You were in the garden when someone applied pesticides. The spray blinded you. You must collect food with your eyes closed.
  - You had a great year! You successfully had three baby chicks. You must gather twice as much food as the other birds.
- Assign a student to be a feral cat. The cat chases the children and if tagged, the student needs to freeze for 10 seconds before continuing to play.
- After the students play a round, ask them how many found a blue card. Any students without a blue card are missing water and didn't survive the winter.



Ask them how many found a brown card. Any students without a brown card are missing shelter and didn't survive the winter. Calculate the percentage of students that survived that round.





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Curriculum Set: Wild Time  
Lesson 5: Survival Tag

Goals: Identify strategies that different birds use to survive and explain why population balance is critical in ecosystems.

Science | Math

Grade 6-8

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## Total lesson time: 1 hr 20 minutes

Introduction: 10 minutes

Survivor Tag: 60 minutes

Debrief: 10 minutes

### Materials needed:

Pinney's or arm bands in three different colors

Sandwich size ziplock baggies

3 different bags of dried beans (e.g. black beans, kidney beans, garbanzo beans)

10 paper plates

160 pennies

Paint in eight colors and brush

Six laminated half-sheets that say "Food"

Two laminated half-sheets that say "Water"

### Introduction: (10 minutes)


1. Define abiotic and biotic factors.
  - a. How do they impact bird survival? (e.g. disease, competition, predator/prey interactions)
2. What is a food web? (represents what eats what in an ecosystem and how species are connected through some predator/prey interactions)
3. Define herbivore, omnivore, carnivore.

### Survivor Tag: (60 minutes)

4. Beforehand, make eight groups of pennies with twenty pennies per group. Paint each of the groups of pennies a different color. Once dry, place each group of pennies on a different paper plate. Tape a laminated Food or Water sign to hang off the front of the paper plate.
5. Hide the paper plates (Food and Water stations), preferably in a large field with some natural areas.
6. Divide students into three groups. Each group puts on a different colored pinney or arm band. Assign each group as Herbivore, Omnivore, or Carnivore.
7. Set the boundaries for the playing field. Explain the rules to each group:

#### *Herbivore Instructions*

1. Hand out baggies. Each student puts ten beans in their baggy. Use a type of bean that will only be used for herbivores (e.g. black beans). These are their Lives.
2. You need to find the plates marked as food or water stations. Each one has a different color penny. Collect a penny and put it in your baggy to prove you visited and "ate" or "drank" at the station.

- 
3. Omnivores and carnivores may chase you. If they tag you, you need to give them a Life (i.e. a bean). They will give you a 10 second head start after you hand over your Life. If you run out of your Lives you are out of the game.
  4. At the end of the game, you need to have at least one of your Lives left, and two different water station pennies and four different food station pennies to survive, and therefore, win. There can be more than one winner.

#### *Omnivore Instructions*

1. Hand out baggies. Each student puts ten beans in their baggy. Use a type of bean that will only be used for omnivores (e.g. kidney beans). These are their Lives.
2. You need to find the plates marked as food or water stations. Each one has a different color penny. Collect a penny and put it in your baggy to prove you visited and “ate” or “drank” at the station.
3. You may chase herbivores. If you tag them, you can take one of their Lives (i.e. a bean) and add to your baggy. You must give them a 10 second head start after you take their Life. You cannot tag other omnivores or carnivores.
4. Carnivores may chase you. If they tag you, you need to give them a Life. They will give you a 10 second head start after you hand over your Life. If you run out of your Lives you are out of the game.
5. At the end of the game, you need to have at least one of your Lives left, two different water station pennies, and six food items (either different food station pennies or herbivore Lives (i.e. black beans)) to survive, and therefore, win. There can be more than one winner.

#### *Carnivore Instructions*

1. Hand out baggies. Each student puts ten beans in their baggy. Use a type of bean that will only be used for carnivores (e.g. garbanzo beans). These are their Lives.
2. You need to find the plates marked as water stations. Each one has a different color penny. Collect a penny and put it in your baggy to prove you visited and “drank” at the station. You cannot visit the food stations because those are plants.
3. You may chase herbivores and omnivores. If you tag them, you can take one of their Lives (i.e. a bean) and add to your baggy. You must give them a 10 second head start after you take their Life Circle. You cannot tag other carnivores.
4. At the end of the game, you need to have at least one of your Life Circles left, two different water station pennies, and ten food items (herbivore or omnivore Lives (i.e black or kidney beans) to survive, and therefore, win. There can be more than one winner.
8. Start groups in the following order with one minute between each one: herbivores, omnivores, carnivores.

**Debrief: (10 minutes)**

9. Who survived? How many of each group survived? %?
10. What are things that each species does physically to survive (e.g. hide, camouflage, run, group up)?
11. How do biotic factors impact species survival?
  - a. Humans (both positive and negative affects)
  - b. Disease
12. How do abiotic factors impact species survival?
  - a. Natural disasters (storms, floods)
  - b. Limited food or water
13. Energy transfer (as you go up the food chain, energy is transferred to the atmosphere as heat)
  - a) 10% rule as move up food chain
  - b) Energy used for moving, breathing, etc. vs. energy stored as fat or muscle that becomes food for predator
  - c) This explains why there are more herbivores than carnivores in nature
  - d) Why is it important to have balance? What if we had lots of carnivores? What if we had more herbivores?


**Adjust this lesson for different age groups:**

**More Challenging:**

- Instead of assigning each student as a carnivore, omnivore, or herbivore, assign each student a specific species from the table below. Before or after the game, have the students look up information about their species, including:
  - What does it look like?
  - What type of food does it eat?
  - What adaptations does it have to survive?

Explain that this is only a game! Wild turkeys would not eat a mallard for instance.

<b>Herbivore</b>	<b>Omnivore</b>	<b>Carnivore</b>
Mallard	Chickadee	Great Horned Owl
Rock pigeon	Wild Turkey	Peregrine Falcon
Mourning dove	Crow	
House finch	White breasted nuthatch	
House sparrow		
Grasshopper		
Caterpillar		
Earwig		
Ant		

- 
- Assign one student to be Pesticide. If they tag a student, they take one of their Lives and put in their baggy. They must give the student a 10 second head start after taking their Life.
  - Test out the importance of predator/prey balance by adding lots of carnivores to the game for a round. Then try a round with lots of herbivores. Discuss what happens in each scenario.



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**Curriculum Set: Wild Time**  
**Lesson 6: Nature Scavenger Hunt**

Goals: Describe surroundings using good observation skills, identify concepts and terminology from prior five lessons in the Wild Time curriculum, and give examples of how humans impact the environment positively and negatively.

**Science | Writing**

**Grade 6-8**

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## **Total lesson time: 50 minutes – 1 hr 10 min**

Scopes and Binoculars: 20 minutes (optional)

Nature Scavenger Hunt: 30 minutes

Journaling and Debrief: 20 minutes

### **Materials needed:**

Scope (optional)

Binoculars (optional)

Bird field guides

Nature Scavenger Hunt sheets

Clipboards

Science Journals

### **Lesson Tips:**

- We recommend pairing this lesson with a field trip to a natural area.
- You can check out bird field guides at most libraries. You can also use *Madison Audubon's Bird Guides for Kids* (donation of \$5/book) which includes 27 of the more common birds in south central Wisconsin. This book's simpler format includes fun facts and large pictures.

### **Scopes and Binoculars (optional): (20 minutes)**

1. Set up scope and assist students with using it to view distant wildlife.
2. Review binocular basics from Lesson 2: Ornithology.
3. Take a nature hike with binoculars, stopping periodically to look for birds. Identify any sightings a bird field guide.

### **Nature Scavenger Hunt: (30 minutes)**

4. Break into teams and hand out a scavenger hunt sheet and clipboard to each team.
5. This should be a relatively silent time. Tell kids to observe their surroundings and pay attention to sights and sounds that might go beyond the scavenger hunt.

### **Journaling and Debrief: (20 minutes)**



6. Debrief

- a. What was different between the school yard and this natural area?
- b. What are positive and negative human impacts to nature?]
- c. What can you do to help nature and wildlife?
- d. What were some new sights and sounds you noticed?

7. Science Journaling

- a. Everyone writes the date, time, location, and weather.
- b. Everyone takes time to write/draw what they learned about their surroundings, questions they have, or what they saw during their nature hike or scavenger hunt.
- c. Model effective journaling by recording your own observations and sharing with the students.
- d. If a student is unsure how to begin, ask them to pick a favorite animal and write the letters down the side of the page (e.g. ROBIN). Ask the student to find something they can see that starts with each letter of the word (e.g. R is for “red flowers”).

**RESOURCES:**

Bird Field Guides:

*Birds, Nests & Eggs (Take Along Guides)* by Mel Boring

*Birds of North America* by Kenn Kaufman

Bird Phone App:

[Merlin Bird ID App](#) from Cornell Lab





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Curriculum Set: Wild Time

Additional Resources: Trivia Packet

**Grade 3-5**

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## Insect Trivia

1. Butterflies use what body part to taste? (Feet)
1. Do boy or girl crickets chirp? (Boys)
2. Are centipede's insects? (No, they have 100 legs.)
3. What color is insect blood usually? (Yellow!)
4. Do insects have noses? (No, they "smell" using their antenna.)
5. How many "teeth" (stylets) do mosquitos have? (47)
6. How many ears do praying mantises have? (One – they are the ONLY animal with just one ear and it's in their chest!)
7. Are ladybugs herbivores or carnivores? (Carnivores, they eat aphids.)
8. Can bugs feel pain? (No.)
9. How many brains does a leech have? (32)
10. Why do fireflies light up? (To attract a mate – each have a unique code like a song.)
11. Is a bug's skeleton on the inside or outside? (Exoskeleton – like a set of armor.)
12. What do butterflies hatch out of? (A cocoon; ask students about metamorphosis.)

## Reptile and Amphibian Trivia

1. What is the difference between venomous and poisonous? (Venom is injected, poison is absorbed or ingested; snakes are venomous, some frogs are poisonous.)
2. Snakes have a special body part called the Jacobson's Organ. What is this used for? Hint – it's in their mouth. (Taste air particles to "smell" the air. Snakes have terrible vision (they can only see vague black and white shapes) so they use their sense of smell to know their surroundings. Snakes cannot smell through their nostrils. They use their nostrils for breathing.)
3. If you were a ball python, what is the biggest size fruit that you could swallow whole? (Watermelon. Pythons can stretch their jaw in four different places in order to swallow their food whole. Their lower jaw isn't fused in the front (feel how your jaw is fused) so it can stretch much further.)
4. What is the difference between a lizard and a snake? (Snakes do not have eyelids – this is why it always looks like they are staring at you even when they are sleeping! There are legless lizards that look like snakes except that they have eyelids.)
5. Can reptiles and amphibians grow back body parts? (Both can regenerate.)
6. How long can a crocodile go without eating? (Two years.)
7. Which type of reptile doesn't have teeth? (Turtles.)

- 
8. Why do frogs close their eyes when they eat? (The eye muscle pushes their food down their throat.)
  9. What is it called when a tadpole becomes an adult frog? (Metamorphosis – review.)
  10. How often do frogs shed? (Once a week they shed their entire body's skin and then eat it! Snakes and turtles shed their skin or scutes much less frequently, usually only once a month or every few months.)
  11. A group of birds is called a flock. A group of frogs is called: a herd, a colony, an army, or a swarm? (An army.)
  12. What colors can frogs see: (a) black and white, (b) same as humans, (c) only red and green? (Black and white.)
  13. Which of the following have webbed feet: frogs, toads, water turtles, box turtles? (Frogs and water turtles.)
  14. Name at least one way that snakes are good.
  15. Which of these characteristics do amphibians NOT have: slimy skin, scales, gills, legs? (Scales – reptiles and fish have scales.)


### Mammal (Bat) Trivia

1. On average how many mosquitos do bats eat in one hour? (1200! Yay bats!)
2. How many babies does a bat mom have each year? (Only one.)
3. True or false: bats in Wisconsin drink blood. (False! Only three species of vampire bats drink animal blood and they do not even live in North America.)
4. True or false: bats are blind. (False, bats can see but they use echolocation to find food and avoid predators from far away distances.)
5. How many fingers do bats have on each wing? (Five.)
6. True or false: bats are the only mammals that fly. (True, sugar gliders and flying squirrels only glide, they cannot fly.)
7. Why do bats hang upside down? (They have weak legs, their tendons lock into place so it uses no energy to hang upside down.)
8. True or false: All bats eat insects. (False, lots of bats eat only pollen and fruit.)
9. True or false: bats have good hearing. (True, in fact they have the best hearing of all land mammals.)
10. Bats usually hunt for insects at night. What is this called? (Nocturnal.)
11. True or false: All bats have rabies. (False! All mammals can get rabies, but very few bats actually have it. Bats are very clean and groom themselves like cats.)
12. True or false: Bats can get tangled in my hair. (False! Remember bats use echolocation? This helps them avoid getting tangled in your hair or touching you at all. They see you as a predator and do NOT want to get anywhere near you.)



## Bird Trivia

13. What is the state bird of Wisconsin? (Robin)
14. What bird's call sounds like "Who cooks for you? Who cooks for all?" (Barred Owl)
15. Which of the five senses is strongest for a bird? (Sight. If we had eyes like a bird, they would be the size of baseballs.)
16. What makes a bird a bird (i.e., what do birds have or do that no other type of animal has or does)? (Feathers. Explain why it's not beaks (turtles), flight (insects, bats), eggs (platypus, reptiles, amphibians.))
17. What is the fastest bird in the world? (Peregrine Falcon)
18. How many bird species are there in the world? (10,000), the US? (900), WI? (about 400)
19. What are different ways that humans can help bird populations?
20. Hummingbird fun facts for true/false:
  - a. Can fly backwards
  - b. About the weight of a penny
  - c. Cannot smell at all
21. How many eyelids do birds have? (Three. The third is called a nictitating membrane. It's clear-ish and used to protect the eye while flying or swimming, like a goggle.)
22. What is unihemipheric sleep? (When we go to sleep, our entire brain enters sleep mode. Certain animals like ducks can keep half of their brain awake while the other half sleeps. You can see groups of mallard ducks where the ones on the inside of the circle are fully asleep (both eyes closed) because they feel safe from predators. The ducks on the outside of the circle only partially sleep. The eye facing the inside of the circle is closed (asleep), but the eye facing outwards is open so they can keep alert and protect the group. Dolphins and whales also use unihemipheric sleep since they need to stay awake to remember to swim to the surface and breathe air.)
23. Are birds warm or cold blooded? (Warm blooded, like mammals.)
24. True or false – all bird species build nests. (False, some species like the kestrel are cavity nesters and look for holes in trees or for bird houses to nest in.)
25. Why do woodpeckers peck on trees? Hint – it's not to drill holes to find insects. (Woodpeckers tap on trees to communicate. They can't sing like many other birds.)
26. Can birds dream? (Scientists think that birds can dream, and that they dream about singing in order to improve their singing the next day.)
27. Crows live in every state of the United States except one. Which one? (Hawaii)
28. What bird needs to put its head upside down in order to eat? (Flamingo)

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29. True or False. All birds have hollow (pneumatic) bones? (False. Some diving birds – like loons or puffins – do not have hollow bones – that would make diving difficult)
  30. True or False. Most birds cannot move their eyes. (True. Birds with eyes on the sides of their heads have a wide [visual field](#), while birds with eyes on the front of their heads, such as owls, have [binocular vision](#) and can estimate the [depth of field](#).)