



# BLACK-CAPPED CHICKADEES

## ADVENTURE IN LEARNING LESSON

### Lesson Description:

This lesson explores some of the behaviors and traits of black capped chickadees, one of the most common birds in Minnesota. After viewing the video, participants will complete a set of questions using range maps of 4 different species of chickadees. Following the mapping activity, you and your family are challenged to make observations and journal entries in their own yard or neighborhood about the birds that are currently there.

### Guiding Question

Why do chickadees and other birds live where they do?

### Concepts

1. Maps allow us to better understand and study the long term behaviors of animal populations and territories.
2. Birds provide an accessible way to observe physical and behavioral adaptations.
3. Observing birds can help to trace the phenology of a specific place and mark its change over short or long periods of time.

### Outcomes

Upon completion of this lesson the individual will be able to:

- Interpret range maps to answer questions about chickadee territories in the United States.
- Make inferences about what determines a successful habitat for different bird species.
- Conduct a neighborhood or backyard bird survey.

### Minnesota Standards in Appendix

# BLACK-CAPPED CHICKADEES

Watch this [5-minute video](#) or read the story below:

(Video also at <https://www.youtube.com/watch?v=xgM6TulGKOg>)

## CHICKADEE STORY

Black capped chickadees live in Minnesota all year long unlike many other species which migrate to separate summer and winter habitats. Black capped chickadees are some of the most common birds seen in Minnesota year round.

Black capped chickadees and other birds have many different calls and sounds that they make to communicate with one another. Calls serve many purposes including attracting mates, marking territory, warning of danger, and locating other birds. Since chickadees form flocks in the winter time, each flock might have slightly unique calls to communicate. This is similar to humans having different languages to talk to one another.

Chickadees have many behavioral and physical adaptations that help them to survive the long winter in Minnesota. In order to stay warm, chickadees will fluff out their feathers on cold days to trap air inside of the spaces between those feathers. This allows that air to heat up and keep them warm. Have you ever put on a cold mitten before? It takes a bit of time for the heat from your hand to heat up that space inside the mitten, just like the chickadees heat up the air trapped by its feathers. Chickadees also eat a lot more food in the winter time to build up energy that can be used to heat their tiny bodies. Chickadees don't have much space to store energy, so they will eat up to 10% of their body weight in a single day. These feathered wonders will also "cache" or store food in hiding places to come back to eat later.

Chickadees also have some interesting things happening with their body temperatures and heart rate in the winter. When they are cold, their heart rate can increase to 600 beats per minute! For comparison, an average heart rate for humans is between 60-100 beats per minute. The chickadee's blood vessels will shrink when it is cold outside, meaning that the heart needs to work harder to keep that warm blood circulating throughout the bird's body. At night when the chickadees are resting their body temperature will decrease by as much as 20 degrees to conserve what little heat and energy they can store.

When winter starts to fade into spring, the chickadees will begin to form their nests. Black capped chickadees usually begin nesting in April. Chickadees are cavity nesters, meaning that they will find a tree and create a small hole in it to lay their eggs. Check out the pictures down below for a visual. The photo on the left looks at a cutaway section of a tree, giving a sneak peek at the inside where a nest would be out of view. The photo on the right shows a chickadee clearing out space in a tree for its nest.



Photo Source: <https://nestwatch.org/learn/focal-species/black-capped-chickadee/>

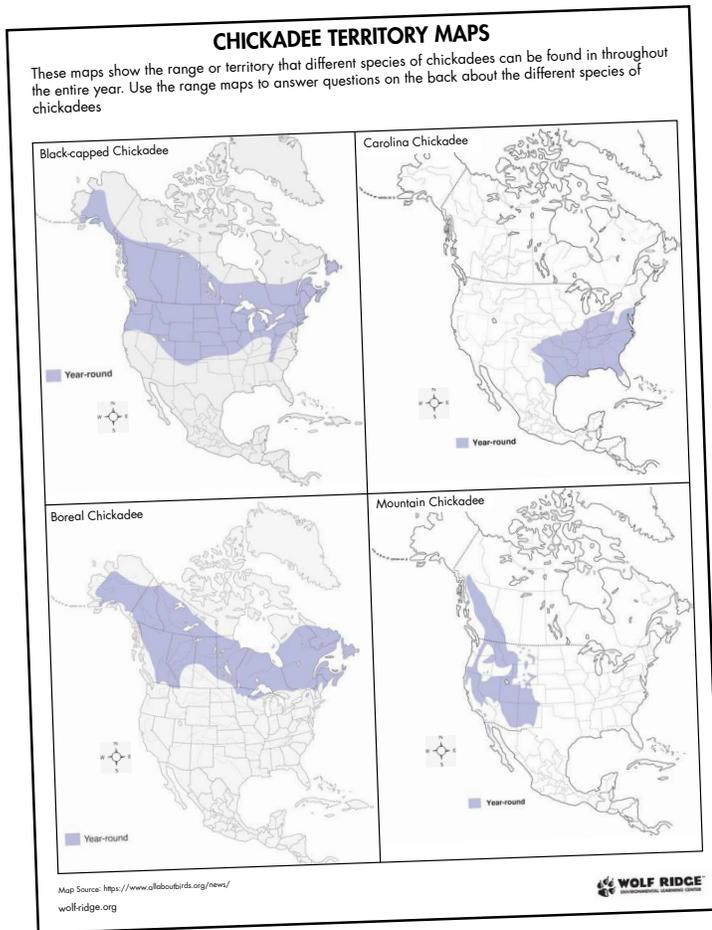
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# BLACK-CAPPED CHICKADEES

## Chickadee Territory Maps

Chickadee Territory Map worksheet in appendix.



### CHICKADEE TERRITORY MAPS QUESTIONS

1. Which species of chickadee has the largest year round range? Which has the smallest?
2. How many of the maps above show birds with part of their year round range in Minnesota?
3. Which type of chickadee would you be most likely to see if you were in Florida? You may use another map to help you locate Florida if needed.
4. Which type of chickadee has a year round range that is mostly in the western half of the United States? Use the compass on each map to help find your answer.
5. Name three states that are part of the year round range of the Mountain Chickadee.
6. Which of the maps above also shows some of the largest rivers in North America? Look closely as they can be hard to see at first.
7. As the maps show, different species of chickadees live in different areas. List at least three reasons that these birds might live in different areas of North America. If you need a clue you can watch the video or read through the description at the beginning of the lesson.

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INTERPERSONAL LEARNING CENTER

### Answer Key for Chickadee Territory Maps

1. Black capped chickadee, Mountain chickadee
2. Two
3. Carolina Chickadee
4. Mountain Chickadee
5. answers will vary (Nevada, Utah, Arizona, etc)
6. Carolina Chickadee
7. answers will vary (food sources, temperature, ability to successfully nest, etc)

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## Neighborhood Birds Journaling

Neighborhood Birds Journaling worksheet is in the appendix.

### NEIGHBORHOOD BIRDS JOURNALING

Take a walk in your neighborhood or sit outside with an adult, do a bit of nature journaling to see what you can learn from the birds around you. Use the back of this sheet to create one journal entry. Ideas for a journal entry include the following:

#### Sound mapping

Sit quietly in one spot for 3 minutes. During those 3 minutes, use a journal page to mark anytime that you hear a sound made by a bird. You can mark your sound map in any way that you want. I marked my sounds on the example map using dots. See the example entry below. Once you have finished make a tally of all the birds that you heard. Try sitting in the same spot each day for a whole week or a whole month to see how the bird sounds around you change.

Example:

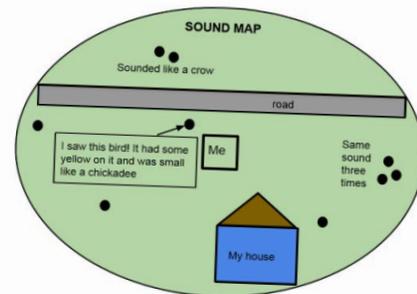
**Today's Date:** 4-1-2020

**Time:** 8:15 am

**Total bird noises:** 9

**Weather:** sunny and calm

**Observations:** I was hearing other people walking along on the road and talking with one another. The small yellow bird that I saw was exciting! It was up really high in a birch tree but it didn't stay there for long. Yesterday I only heard 2 bird sounds. I wonder if it was because it was so much colder then?



#### Look for bird signs

Search around your house and neighborhood for any signs that birds have been in the area. Signs of birds include holes in trees, nests, bird songs/sounds, and sighting a real live bird. If you do see a bird, quietly observe its behavior for a bit. Ask yourself the question, "Why is that bird doing that?" By asking these questions you may discover that the bird is looking for food, searching for a mate, establishing a territory, or communicating with other birds. Write any observations in a journal and spend a few minutes each day adding a new entry.

#### Make observations at a bird feeder

If you have access to a bird feeder at home or in a nearby area, spend 10 minutes each day making observations at the feeder. You can record how many birds you see, what type of birds are most common, or what feeder seems to be the most popular. Try visiting the feeder early in the morning, in the middle of the day, and in the early evening to see if there are any noticeable changes. Record your observations in a journal and look back occasionally to see if things are changing.

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## Appendix Resources

Check out these websites below for more interesting information on chickadees and other birds.

- <https://www.birds.cornell.edu/home/> - great website with info on bird ID, videos, research, and apps to use on your device
- <https://nestwatch.org/learn/focal-species/black-capped-chickadee/> - a link to the black capped chickadee through the Cornell Lab or Ornithology
- <https://feederwatch.org/> - a citizen science bird watching survey that can be completed at home

## MN Standards

### 4th Grade Social Studies Standards

- 4.3.1.1.1 - Create and use various kinds of maps, including overlaying thematic maps, of places in the United States, and also Canada or Mexico; incorporate the "TODALS" map basics, as well as points, lines and colored areas to display spatial information.
- 4.3.1.2.1 - Choose the most appropriate data from maps, charts, and graphs in an atlas to answer specific questions about geographic issues in the United States, and also Canada or Mexico.
- 4th Grade Science Standards
- 4L.4.1.1.1 Construct or support an argument that traits can be influenced by different environments.

## Worksheets

- Chickadee Story
- Chickadee Territory Maps
- Neighborhood Birds Journaling

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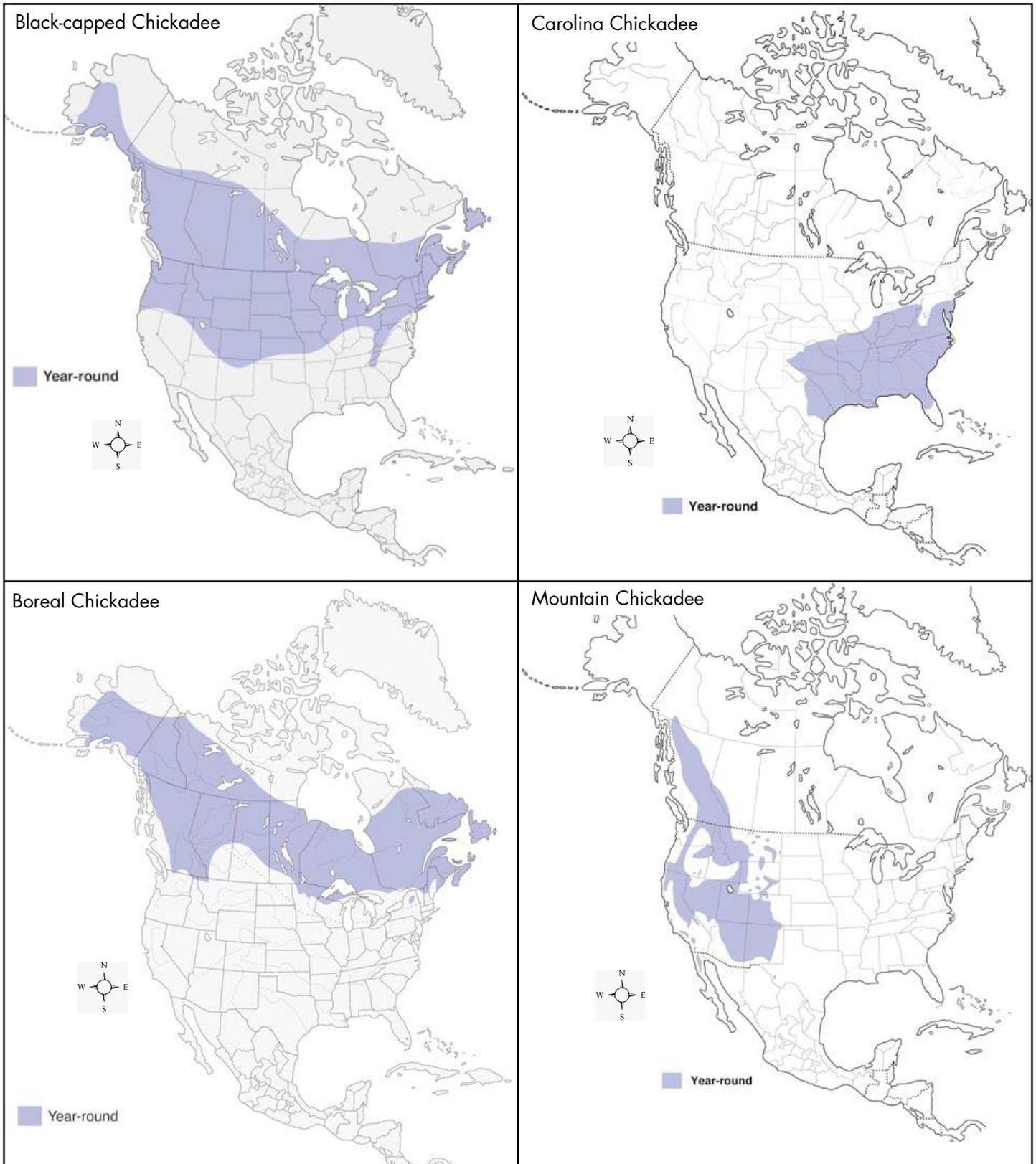
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# CHICKADEE TERRITORY MAPS

These maps show the range or territory that different species of chickadees can be found in throughout the entire year. Use the range maps to answer questions on the back about the different species of chickadees



Map Source: <https://www.allaboutbirds.org/news/>

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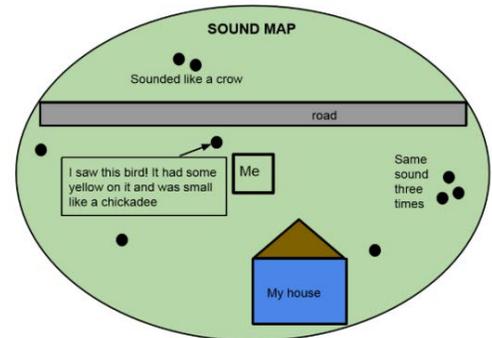
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