

**Bluebird Trails, Bluebird Tales**  
**Curriculum for Teaching about Bluebirds in Kansas**

**3-5 grade**

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## Topic 1: Which box is best?

Background: Bluebirds can be a little picky about their living arrangements. They will only nest in a cavity (in nature, this would be a hole in a tree), they prefer certain hunting conditions, and their babies will require a tree close enough for the first flight. In this activity, students will evaluate which box produced the most fledglings and weigh several components of habitat leading to success or failure.

1. Divide students into small groups. Project the 360 degree pictures of the houses in the Gallery. Using the attached Bluebird Checklist groups of students should pick out a box they think meets the most requirements off the list. Remind them that they may not be able to evaluate all the items on the checklist just from a photo, but groups should discuss all the ones that are visible. Facilitate a discussion among groups why they chose as they did. **3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.**
2. Have the students look at the data for the houses they evaluated. Depending on the group, you can choose 1 column of data (nesting dates, number of eggs, number of fledglings, etc.) or you can allow the groups to decide which column(s) they would like to use. The groups should order the houses according to their success. They should decide whether they chose the most successful house in #1 and why or why not. **3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.\***
3. Students can use the data to create either a picture graph or bar graph. Then have them create word problems (with an answer key) based on the graph. They should try each other's word problems. A fun way to do this would be to place the problems on notecards all around the room. Allow them to move around the room and solve on individual answer sheets. **3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.**
4. Have the students write an explanation of what they have learned from the data. Groups should work together to edit each individual's writing. They may disagree with conclusions, but should make sure that they have all used the data correctly and clearly. **W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.**
5. Give students the coordinate graphing worksheet and plot points, found in resources at the end of this document. By plotting the coordinates and connecting the dots, they will create a bluebird house. Have them check the photo gallery to create a background.
6. Have small groups of students try to build a box from cardboard (or if you have facilities, try one out of wood). Good sample plans are at <http://www.nabluebirdsociety.org/nestbox-plans/>. They will need to measure and cut carefully and work together to gently tape it together with sturdy tape. **3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.**

## Topic 2: Life Cycle

Background: Bluebirds have a fairly typical avian life cycle. Parents build a nest, lay eggs and incubate them, babies hatch and grow as parents feed them, then learn to fly and hunt on their own so they can leave the nest. Bluebirds migrate in the winter to warmer hunting grounds and will return in the spring to nest again.

1. Divide students into small groups. Project the Bluebird Life Cycle found separately from this curriculum. Give each group the page detailing the life cycle. They should read out loud in their groups, highlighting important details. After they finish, return to the projected life cycle and have each group add details from the reading to the projection. If you have a SmartBoard, you can save this for them. Otherwise, you may choose to either write it on a large sheet of paper or take a picture of the final to print off. **3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.**
2. Have the groups create a news show about the life cycle. Challenge them to think about not just headlines, but sports, weather, crime reports, etc. They could use photos and videos to enhance their presentation. Allow them to practice and then present their newscast. **SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.**
3. Use the data (in an accompanying document) to graph bluebirds at different stages from year to year. Point out to students that each year has different numbers of nests, eggs, and fledglings. Brainstorm reasons for this (different numbers of boxes available, weather, other species competing, amount of food available, etc.). Use the type of graph your students are working on. Here are some ideas:
  - a. Pie Chart: Students should show numbers of fledges, babies lost, and unhatched eggs. Does this total the number of eggs altogether? Why or why not?
  - b. Bar Graph: Pick a park and graph the number of fledges over several years. Are there trends or does it change from year to year?
  - c. Pictogram: in a given year, use a pictogram to show either the number of eggs or the number of fledges.
  - d. Line Graph: Use a line graph to show at least 2 parks over a 5 year period. Do the lines follow the same pattern or did the parks have different highs and lows? What could cause differences? **3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.**

### Topic 3: Bluebird Feeding Frenzy

Background: Bluebirds are mainly predators, hunting insects, especially during nesting season. Unlike birds like flycatchers and swifts, they catch their prey on the ground rather than in flight. Because of this, they prefer short grass instead of tall plants and bushes. They also eat a wide variety of berries when insects are not available, late in the fall. Bluebirds will do best where a wide variety of foods are available.

1. Divide the students into small groups. Project the Basic Food Web. Have them research specifically several things bluebirds might eat, both prey and berries. All About Birds (Cornell website) is one good resource. Challenge them which of these food items cannot make their own food. They should name all animals. Then they should research what those prey like to eat. [BugGuide.net](http://BugGuide.net) is a reliable resource for this (they will need to scroll down below the pictures to find food). Have them continue researching until they get to the producer level. They may have a good section in their science books regarding what plants need to make food. Have them create a more complete food web from their information. 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
2. Have students compare the physical features of bluebirds with other species. They should pay close attention to beaks, feet, eye placement, size, and color. They should also note what food the other species eat. Discuss whether the structures of these body parts affects what each species eat. All About Birds could be a useful tool, as it will provide both excellent pictures and the eating habits of each bird species. 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

## Topic 4: Bluebird Writer's Workshop

Background: Bluebirds make a wonderful springboard for all types of writing: expository, persuasive, narrative, and descriptive. Use this section in conjunction with your regular language arts to connect what they have learned in science to their writing. *W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.*

1. Narrative
  - a. Many students find narrative writing the most natural. Have available several books from the reading list or any you find in your library that tell stories about bluebirds. Discuss how they can tell the story of a creature that cannot voice its own story. Will they tell the story of a particular stage of its life cycle, or about the bluebird hunting? Or they can tell the story from the point of view of humans, maybe people who monitor boxes or schoolchildren with a bluebird box on the grounds.
2. Descriptive
  - a. Bluebirds lend themselves to the colorful language of descriptive writing. Show the photo gallery and play bluebird calls (Cornell website) as students work to create poems trying to evoke all the senses. Have them record their poems and create a picture or short presentation on the computer to illustrate. *SL.3.5 Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.*
3. Persuasive
  - a. As they have learned about bluebirds, the students may have formed opinions about parklands, pesticide use, or the location of bluebird boxes, to name a few. Have them brainstorm a topic that is important to them. Who might be most able to help the situation? They should compose a letter addressing their concerns. *W.4.1,W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.*
4. Expository
  - a. This can be the most difficult writing for many students, especially if they feel an emotional bond to the topic. You might have them choose from the following prompts:
    - i. A parent bluebird is explaining how to find food to its babies.
    - ii. A baby bluebird tells its younger siblings how it made its first flight.
    - iii. A scientist is explaining how bluebirds make their nests and lay eggs.
    - iv. A human mom or dad is telling how to build a bluebird box.
    - v. A bluebird monitor is explaining to a new monitor how to check the box.

## **Bluebird Reading Resources**

### **Fiction**

*Amelia Bedelia is for the Birds* by Herman Parish (robin nest)

\**Baby Bluebird, Please Come Home* by Amma Lee (pre-K)

*Bird Builds a Nest* by Martin Jenkins

\**Bluebird* by Lindsey Yankey

\**Blue Sky Bluebird* by Rick Chrustowski (realistic fiction)

\**Bluebird Summer* by Deborah Hopkinson (realistic fiction)

*Have You Heard the Nesting Bird?* Words by Rita Gray / pictures by Kenard Pak

*Jabber the Steller's Jay* by Sylvester Allred / illustrated by Diane Iverson (example of another blue bird)

\**Ricki's Birdhouse* by Monica Wellington (with birdhouse plans in the back) (realistic fiction)

### **Nonfiction**

*Birds - A Question and Answer Book* by Isabel Martin

*Birds* by Trudi Strain Trueit

*Birds and their Feathers* by Britta Teckentrup

\**Bluebird's Nest* by Dorothea Deprisco (pre-K)

*Every Day Birds* by Amy Ludwig VanDerwater

*Feathers: Not Just for Flying* by Melissa Stewart / illustrated by Sarah S. Brannen

*Little Kid's First Big Book of Birds* by Catherine Hughes (Nat Geo)

\**What Bluebirds Do* by Pamela F. Kirby

*Where Do the Birds Go: a Migration Mystery* by Rebecca Olien / illustrated by Katie McDee

*Wild Fliers* by Martin and Chris Kratt (K-2)

\*Designates a book mostly or entirely about bluebirds. Others focus on other species, but may be useful.

### **Essays about Eastern Bluebirds for young adults and adults:**

Julie Zickefoose: *The Bluebird Effect: Uncommon bonds with common birds*

Julie Zickefoose: *Baby Birds: An artist looks into the nest*

John Yow: *The Armchair Birder: Discovering the secret lives of familiar birds*

### **Resources:**

*Backyard Birds* by Karen Stray Nolting and Jonathan Latimer

*Birds: A Fully Illustrated, Authoritative and Easy-to-Use Guide (A Golden Guide)* by Herbert S. Him and Ira N. Gabrielson

*Bird Guide of North America*, National Geographic (contains good pages specific to eastern and mountain bluebirds)

*Bluebirds Forever*, Toops (1994)

*Birds of Kansas* by Stan Tekiela

*Birds in Kansas*, Thompson, et.al (2011)

*Egg & Nest* by Rosamond Wolff Purcell

*A Field Guide to Western Birds' Nests* by Hal H. Harrison

*The Guide to Kansas Birds and Birding Hot Spots*, Gress & Janzen (2008)

*Nests* by Sharon Beals

*The Sibley Guide to Birds*, 2nd Ed. (2014)

### **TECHNOLOGY - OPTIONAL VIDEOS**

If you have access to technology in your classroom, here are a few educational videos you may wish to watch and/or show your class.

<https://www.youtube.com/watch?v=gSiH4fAXkl4> - Bird song identification

[https://www.youtube.com/watch?v=W7\\_D0DopQW4](https://www.youtube.com/watch?v=W7_D0DopQW4) - Bird song identification

<https://www.youtube.com/watch?v=z4RjLwn3hqw> - Bluebirds hatching

<https://www.youtube.com/watch?v=eMWeQWGla0Y> - Tranquil birds singing (for relaxation)

<https://www.raptorresource.org/birdcams/decorah-eagles/> - Live stream of Eagles in Decorah, Iowa

<http://cams.allaboutbirds.org> - Various bird webcams

<https://www.audubon.org/birdcams> - Various bird webcams