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# Appendix A

## Books

Attenborouh, D. (1998). *The life of birds*. Princeton: Princeton University Press.

Council for Environmental Education. (2006). *Flying Wild: An educator's guide to celebrating birds*. Houston: First Printing.

Erickson, L. (1996). *Sharing the wonder of birds with kids*. Duluth, MN: Pfeifer-Hamilton.

Gans, R. & Mirocha, P. (Illustrator). (1996). *How do birds find their way?* New York: Harper Collins Publishers Inc.

Hunken, J. (1992). *Birdwatching for all ages*. The Globe Pequot Press.

Lasky, K. & Catrow D. (Illustrator). (1997). *She's wearing a dead bird on her head!* New York: Hyperion Books for Children.

Salmansohn, P. & Kress, S.W. (2003). *Saving birds: Heroes around the world*. Gardiner, ME: Tilbury House Publishers.

Stotksy, S. (1998). *Birds, birds, birds (Ranger Rick's Nature Scope)*. New York: Chelsea House Publishing.

## BRBT Partners Websites

Klamath Bird Observatory [www.KlamathBird.org](http://www.KlamathBird.org)

The River Center [www.centralmodocrivercenter.org/index.html](http://www.centralmodocrivercenter.org/index.html)

Modoc National Wildlife Refuge [www.fws.gov/modoc/](http://www.fws.gov/modoc/)

## Additional Websites

American Birding Association [www.americanbirding.org/](http://www.americanbirding.org/)

American Bird Conservancy [www.abcbirds.org/](http://www.abcbirds.org/)

Cornell Lab of Ornithology [www.birds.cornell.edu](http://www.birds.cornell.edu)

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International Migratory Bird Day (IMBD) [www.birdday.org](http://www.birdday.org)

Klamath-Siskiyou eBird [//ebird.org/Klamath-Siskiyou/](http://ebird.org/Klamath-Siskiyou/)

National Audubon Society [www.audubon.org](http://www.audubon.org)

National Fish and Wildlife Foundation [www.nfwf.org](http://www.nfwf.org)

Partners in Flight [www.partnersinflight.org](http://www.partnersinflight.org)

Peterson Online [www.petersononline.com](http://www.petersononline.com)

Point Reyes Bird Observatory [www.prbo.org](http://www.prbo.org)

PBS [www.pbs.org/lifeofbirds.com](http://www.pbs.org/lifeofbirds.com)

Schools of California Online Resources (SCORE) Project [www.sdcoe.k12.ca.us/score/](http://www.sdcoe.k12.ca.us/score/)

Wild Birds Unlimited (WBU) [www.wbu.com](http://www.wbu.com)

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# Appendix B

## Field Trip Checklist

*The Basin and Range Birding Education Kit lesson plans highly taking kids outdoors to experience birds up-close in their natural settings. Use this Field Trip Checklist to prepare your students for birding adventures and scientific discoveries!*

### 1. Decide on Field Trip Lesson Plan

Select a BRBT lesson plan fit for your classroom. Then read over the provided background information, activity procedure, and field trip ideas.

### 2. Select Site and Date

Check out the BRBT information section and map for potential field trip sites. Schoolyards are also a great field trip site. Don't forget to schedule alternative dates in case of bad weather!

### 3. Make Chaperone Arrangements

You should arrange to have at least one chaperone for every 5-7 students. Chaperones help supervise and guide students while ensuring students are safe.

### 4. Reserve a BRBT Kit

To reserve a BRBT kit for the resources and equipment you will need to call The River Center at 503-233-5085.

### 5. Prepare Students

Give students a list of what thing they need to bring. Depending on the field trip this may include a day pack, hat, sturdy shoes, appropriate clothing (warm coat, rain jacket, gloves), sun block, lunch and/or snacks, and water.



### 5. Prepare Yourself

Be sure to bring extra lunch and/or snacks, and water bottles (some student may forget or need more). Also bring a first aid kit for safety.

### 6. Complete Pre-lesson

Most of the BRBT lesson plans include a pre-lesson activity that can be used before going out into the field.

### 7. Gather Equipment

Most the materials needed are included in the kit and include binoculars, field guides, clipboards, and pencils. After picking a lesson plan browse the introductory side panel for additional materials needed. Make sure to copy student journal sheets.

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# Appendix C

## Science Standard Descriptions

### California

#### Kindergarten

2.a.- Students know how to observe and describe similarities and differences in the appearance and behavior of plants and animals (e.g., seed-bearing plants, birds, fish, insects).

#### Grade One

2.a.- Students know different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.

2.b.- Students know both plants and animals need water, animals need food, and plants need light.

2.c.- Students know animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

4.a- Draw pictures that portray some features of the thing being described.

#### Grade Two

2.b.-Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.

2.c.- Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.

3.b.- Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

4.c.-Compare and sort common objects according to two or more physical attributes (e. g., color, shape, texture, size, weight).

#### Grade Three

3.a.- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

3.b.- Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

3.c.- Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.

3.d.- Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

5.a.- Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.

#### Grade Four

3.b.- Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

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### **Grade Five**

- 6.a.- Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.
- 6.c.- Plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure.
- 6.g- Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

### **Grade Six**

- 7.a.- Develop a hypothesis.
- 7.b.- Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

### **Grade Seven**

- 3.a.- Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms.
- 7.a.- Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.
- 7.b.- Use a variety of print and electronic resources (including the World Wide Web) to collect information and evidence as part of a research project.
- 7.c.- Construct scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g., motion of Earth's plates and cell structure). (Binoculars)
- 7.d.- Construct scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g., motion of Earth's plates and cell structure).

### **Grade Eight**

- 9.a.- Plan and conduct a scientific investigation to test a hypothesis.
- 9.e.- Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.

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# Appendix D

## Take Action!

*After learning about the birds and habitats of the Basin and Range Birding Trail I am committed to bird and habitat conservation. I will try my best to take the following actions to help birds:*

- Observe birds and their habitats in my schoolyard or backyard
- Identify local birds using field marks, behavior, and sound
- Monitor birds by participating in bird counts
- Record bird observations and sketches in a field journal
- Become a “citizen scientist” by sharing my bird data with scientists
- Plant bird-friendly plants that provide food and shelter for birds
- Hang up bird feeders with healthy bird food
- Put up nest boxes to create habitat for cavity nesting birds
- Visit the Basin and Range Birding Trail to observe and watch birds
- Visit local nature center or wildlife refuge to learn more about birds
- Keep cats indoors especially when “fledglings” (baby birds) are leaving their nest
- Hang silhouettes on windows to help birds avoid flying into
- Be friendly to tourists on the Basin and Range Birding Trail and share knowledge of bird knowledge
- Volunteer at a birding festival such as the Wings Over The Warners
- Participate in a clean-up event to help protect bird habitat
- Share my bird knowledge to others and encourage them to take actions to help protect birds and their habitats

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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# Appendix E

## Glossary

**Adaptation:** A modification, or change, by which a species improves its condition in relationship to its environment over generations.

**Adjustable Eyepiece:** One of the two focusing devices used to form a clear image through binoculars. Usually located on the right eyepiece on binoculars and reads “+ 0 –.”

**Aperture:** The diameter of each objectives lens on a pair of binoculars. The larger the aperture, the brighter the image.

**Barb:** A tiny needle-like structure attached to each side of the feather rachis and points upward to form the contour of the feather.

**Barbule:** A needle-like structure attached to each barb usually having hooklets to keep the feather vane interlocked.

**Binoculars:** A tool used for birding (or birdwatching) and studying birds to enhance one’s ability to see birds. They are essentially two identical telescopes mounted side by side and aligned to point in the same direction.

**Birding trail:** A network of nature sites chosen to help conserve and enhance bird habitat through birdwatching.

**Call:** A vocal communication used by birds that is typically short, simple, and produced by both sexes throughout the year.

**Central Focus:** One of two focusing devices used to form a clear image through binoculars. Located on the hinge on a pair of binoculars.

**Citizen Science:** A partnership between the public and professional scientists. People across the continent to better understand and conserve birds.

**Conifer Forest:** A dense growth of conifer trees (cone bearing trees in the pine family), plants, and underbrush. Typically found at higher elevations in Modoc County.

**Contour Feathers:** Basic vaned feathers of a bird’s body and wings. They coat the body, giving it a streamlined shape, and are highly specialized for bird flight and display.

**Down Feather:** Lacking barbules located under the contour feathers. They are fluffy and keep birds insulated.

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**Economics:** The production, distribution, and consumption of goods and services.

**Eyepiece Lens:** An external component of binoculars where the image is retrieved by the eye.

**Field Guide:** A tool birders and biologists use to identify organisms such as birds when outdoors or in the field. Typically includes information about bird species found in a particular area such as habitat, nesting, feeding, and sound.

**Field Journal:** A scientific tool birders and biologists use to collect information and/or record field observations such as animal observations and vegetative characteristics.

**Field Marks:** Physical characteristics that make one bird species different from another. Examples include coloration, size, and shape.

**Flank:** Bird body part located on the sides of the bird's body.

**Grassland:** An area covered with grasses and/or low growing herbs.

**Habitat:** A home for a given animal consisting of four essential components they need in order to survive- food, water, shelter, and space.

**Magnification:** The “power” of binoculars represented by the first number on a pair of binoculars. For example, the seven in a pair of 7x 35 binoculars represents the magnification and means an object is seen seven times closer than with the naked eye.

**Migration:** Traveling from one place so another, usually to find food, shelter, or a mate and to place a nest.

**Mnemonic Device:** A device used to remember bird songs or calls. This system translates songs into word phases so they are easier to remember.

**Nape:** Bird body part located on the back of the head.

**Non-native:** A species not found naturally in an area or has been introduced after the 1800s.

**Objectives Lens:** An external component of binoculars located at the far end of the barrel. The image first enters the objective lens, is magnified, and formed into a visual image.

**Ornithologist:** A scientist who studies birds.

**Plumage:** The external coat of feathers on a bird that give it its coloration and may differ with season (e.g. breeding or age).

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**Raptor:** A term used by ornithologist for eagles, hawks, falcons, and owls. Also know as birds of prey, raptors are among the fastest and strongest of all flying birds.

**Range map:** A color-code system included in a field guide indicating the range and migration pathways of birds.

**Riparian:** The natural banks along a flowing body of water (e.g. river, creek, or stream).

**Rump:** A bird body part located on the upper part of a bird's tail.

**Sagebrush Steppe:** A dry environment characterized by sagebrush, shrubs, and bunchgrasses.

**Song:** A vocal communication used by birds that is typically long, complex, and almost exclusively produced by male birds during breeding season.

**Species:** A population of individuals able to breed and produce fertile offspring under natural conditions.

**Syrinx:** A sound producing device in birds located below the trachea.

**Wetland:** Lowland area where there is an excess of water such as marsh or swamp.