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Thumbing Through

Explore the World with Shorebirds!

Use this summary to familiarize yourself with the contents and organization of *Explore the World with Shorebirds!*

Introduction

“Why Teach About Shorebirds?” fact sheet

SSSP and Connecting Cultures:

Details on how to participate in the Shorebird Sister Schools Program.

Tips for teaching about cultures and introducing the topic to students.

Profiles of other cultures and their views of conservation and birds.

A Shorebird Primer:

You do not need to be a bird expert to teach about shorebirds!

Background information to teach shorebird behavior, adaptations, migration, research and technology, and conservation.

“How to Identify Shorebird Species” information that is especially useful if you are planning a field trip.

Maps, geographic descriptions, and lists of common shorebirds of your area.

Answers to common migration questions such as: What are migration flyways? What routes do shorebirds take on their long flights between their breeding and wintering grounds? What migration flyway(s) pass through your area?

Classroom and Field Trip

Multidisciplinary Activities include:

Indexes correlating educator’s guide activities with skills and the National Education Standards in science, math, language arts, social studies, and history.

Activities that can be used whether you live near shorebird breeding or nonbreeding areas, migratory stopover sites, or a combination of these.

Multidisciplinary activities designed to help students develop a variety of academic and life skills while learning about migratory shorebirds, shorebird habitat, and the significance of human interaction with both.

You can quickly tell if an activity is for you and your class by looking at key information listed at the beginning of each unit. This includes grade level(s), time requirement, skills and subjects, shorebird concepts, overview, and materials.

Divided By Three Age Categories

Activities are divided into *lower elementary (grades 2–3)*, *upper elementary/lower middle school (grades 4–8)*, and *upper middle/high school (grades 9–12)*. The activities can also be used with *non-school groups and non-formal education centers*. A few activities can be modified for *preschool, kindergarten, and first grade*. Recommendations for using activities with other student groups follow in this section of the guide.

Correlated to National Standards

The lessons in *Explore the World with Shorebirds!* are correlated to National Education Standards and go beyond just science education. They provide opportunities for your students to learn about other cultures and global conservation through the technology components of the program.

Organized by Shorebird Topic

The activities in this education guide are organized into nine Shorebird Learning Topics: *Introduction to Shorebirds, Adaptations, Habitat, Nesting and Breeding, Migration, Shorebird Research and Technology, The “Big” Shorebird Picture, Shorebird Field Trips*, and *Review and Assessment*.

Field Trip Planning and Activities

This section provides many resources for planning a field trip and includes many activities.

Appendix includes:

Shorebird Profiles, organized by flyway, that describe the life history of some of the more common shorebirds.

Shorebird Coloring Pages for developing field identification guides or puppets.

Shorebird resources available such as teaching trunks, slide sets, videos, and shorebird field guides.

Glossary that provides definitions for the italicized vocabulary words that appear throughout the guide and in the vocabulary lists at the beginning of each activity unit.

How to Adapt “Explore the World with Shorebirds!” for Young Audiences

Preschool, Kindergarten, First Grade

Young Children Get Excited over the Little Things!

It will not matter if they never get a chance to see a live shorebird. Exploring the topic in a creative and dramatic way will capture their attention and interest in nature.

Most Young Children Love to Create!

Take advantage of their willingness to express their ideas through art.

Many Young Children Are Often Less Inhibited than Older Students.

Harness their desire to be silly! Use the activities that focus on sound, movement, and drama.

Teach Simpler Concepts

Most of the concepts explored in this education guide are too abstract for a young child to grasp. Simply introducing your preschool, kindergarten, and first-grade students to the group known as shorebirds is a great start. Many of the activities written for lower elementary students can be simplified for younger students. Below are some revised concepts to substitute in the lower elementary activities found in the activities section.

Preschool, Kindergarten and First Grade Shorebird Concepts

- Birds are different from all other animals. (Adapt Build a Shorebird into Build a Bird.)
- There are shorebirds in your neighborhood. (Shorebird Profiles; Shorebird Coloring Pages in the Appendix)
- There are many different kinds of shorebirds. (Shorebird Profiles; Shorebird Coloring pages in the Appendix)
- Sometimes male and female shorebirds look different from each other. (Colorful Changes)
- Many shorebirds live in wetlands. (Shorebird Food Webs)
- Wetlands are important to people and animals. (Wetland Metaphors)
- Shorebirds are an important part of their habitat. (Shorebird Food Webs)
- Shorebirds have to protect their nests and chicks from other animals. (Guard Your Nest; Musical Nests)
- Shorebirds are designed to eat certain things. (What Can I Eat with This Beak?)
- Different kinds of shorebirds use different calls and gestures to find a mate. (Behave Yourself, Calling All Birds)

Create a Shorebird Environment in Your Classroom

Young children learn best through discovery and play. Provide them with opportunities to become familiar with shorebirds by incorporating shorebirds into your classroom. Here are some simple, low cost ideas:

- Add shorebird stories to your book collection. (For suggestions, refer to the Glossary at the end of the education guide.)
- Buy or make a variety of shorebird puppets. Add a puppet stage to your classroom.
- Display the shorebird posters included in this binder in the room.
- Clip shorebird pictures out of magazines and make a concentration game.
- Create a bird-watching station in your room by placing binoculars and beginner field guides where children can watch birds.
- Take your students outdoors to look and listen for birds.
- Play bird-call tapes or CDs in the classroom.
- Take a field trip to a local wetland.



Focus on Skills More Than on Information

Young students learn best through active play and personal discovery. The more you can incorporate a shorebird theme into your everyday, skill-building activities, the more they will learn about this group of birds. Here are some examples of *Explore the World with Shorebirds!* activities that can be adapted to focus on skill-building.

Listening and Observation

Musical Nests (an adaptation of the game Musical Chairs) and Behave Yourself! are simple and fun ways to practice listening and observation skills.

Artistic Expression

Encourage creativity by allowing your students to design and build their own shorebird puppets (Get to Know the Shorebirds Puppet Show) or to create their own, unique shorebird design (Build a Shorebird).

Dramatic Play and Storytelling

Write and act out a shorebird story. (For suggestions refer to the Glossary at the end of the education guide.) Perhaps your class would like to write its own story about a local shorebird and illustrate it themselves (A Day in My Life as a Shorebird). Are your students natural actors? Perform the puppet show script provided or write one of your own as a class (Get to Know the Shorebirds Puppet Show).

Comparing Similarities and Differences

Ask students to compare different groups of birds and even different shorebird species. Compare bills, feet, length of their legs, shape of their heads, and plumage. Do all shorebirds act the same? Do all shorebirds sound the same? (Introduction to Shorebirds; What Can I Eat with This Beak?; Shorebird Profiles).

Scientific Discovery

Almost any outdoor excursion offers an opportunity for scientific discovery. Whether it is a field trip to a local wetland, lake, or beach or a simple walk around the playground, there should be many signs of birds nearby. Look for feathers, tracks, nests, and droppings. Listen for bird-calls and songs. Search for bird foods. Simplify Mud Creature Study into a scavenger hunt for things that live in the mud. Use Cast a Track to bring a shorebird track back to your classroom.

If you can not find many signs of birds, ask “What would bring birds into this area?” Use the activity Shorebird Food Webs to help you figure out what is missing in the habitat you are exploring.

Team Building

Explore the World with Shorebirds! offers many opportunities for students to work together. Whether they team up to write a story, create a set of shorebird puppets (Build a Shorebird; Get To Know the Shorebirds Puppet Show), play a learning game (Musical Nests; Behave Yourself), build a food web (Shorebird Food Webs), or explore a wetland together on a field trip, the activities in this education guide will encourage team building.

Invite Older Shorebird Students to Include Younger Ones in Shorebird Lessons

If the older students in your school are using *Explore the World with Shorebirds!*, ask them to incorporate your class into their activities. Can your class be the audience for a Get to Know the Shorebirds Puppet Show? Can your class visit the Shorebird Fair or dress up as shorebirds in an older class's Shorebird Wax Museum? How about a joint field trip where older students pair up with younger ones to help them use binoculars and identify shorebirds? With some creative thinking, advanced planning, and a desire to mentor younger students, almost any activity in this educator's guide can benefit the preschool, kindergarten, and first-grade audience.



How to Adapt “Explore the World with Shorebirds!” for Home School

Why It Works

You Have Maximum Schedule Flexibility to Be Spontaneous

Since you are not bound by a traditional school year, a defined class schedule, or dictated educator’s guide timelines, you can take advantage of teachable moments as they present themselves.

You Can Emphasize Your Child’s Particular Interests

You do not have to be concerned about activities appealing to a wide range of interests and abilities. You can focus on topic areas especially interesting to your child and can more easily integrate shorebirds into subject areas he or she needs to emphasize.

Family Trips Are Learning Experiences

You have tremendous flexibility for shorebird viewing opportunities when you consider family outings, weekend getaways, and longer vacations. Soon you will notice that shorebirds are everywhere. After using *Explore the World with Shorebirds!* you may even consider a family trip to a prime shorebird viewing area.

Let “Explore the World with Shorebirds!” Grow with Your Child

Use the Subjects and Skills Index Charts found in the Classroom Activities to develop a study plan that emphasizes the skills you want to practice and your child’s specific interests. Activities are provided for grades 2 – 12. Take advantage of your flexibility and explore the world of shorebirds for several years, building up to more complicated topics and community-

oriented projects as your child learns and grows. Families with multiple home school children can easily select an activity appropriate for each child’s age and learning level. See the sample study plan at the end of this section.

Use Your Family Computer as a Shorebird Learning Tool

Tracking migrating shorebirds, posting questions to shorebird biologists, and playing shorebird learning games are just a few of the learning opportunities you will find there. For more information on how to use sssp@fws.gov, refer to How to Use the Shorebird Sister Schools Web Site in SSSP and Cultural Connections.

Network with Other Home School Families for Large Group Activities

Since this educator’s guide was initially designed for use by classroom teachers, many large group educational activities are included. With a little advanced planning and creativity, you can incorporate them into your shorebird lessons. Take your interest in shorebirds to your local home school chapter and brainstorm which activities might be best suited for the group to participate in together.

Being part of a larger group can also have certain advantages. For example, booking speakers or presenters and reserving time with a naturalist at a nature center are usually easier if you are part of a group. Community service projects are often more educational if you plan and work within a group.

Here are some ideas for modifying activities designed for a larger group:

- Combine shorebird activities like Shorebird Food Webs, When the Grass Was Greener, Musical Nests, It’s a Tough Life, Migration Headache, The Incredible Journey, Precarious Path, and Banded Bird, with a field trip or a special shorebird presentation.
- Include your extended family and friends in activities like Guard Your Nest and Imaginary Mist Nests. Plan these activities to coincide with their visits.
- Invite your area home school students to work together to plan and present a Get to Know the Shorebirds Puppet Show or an informational Shorebird Fair within the community.
- Host an afternoon of Shorebird Jeo-Bird-Y or Peeps and Predators in which families test their new shorebird knowledge.

Emphasize Field Trips and Seasonally Relevant Topics

You may have noticed in the sample study plan that several field trip activities were suggested each year. You are in a unique opportunity to emphasize teachable moments. Prepare for the impromptu stop at a local wetland on a good weather day when you know shorebirds could be in the area. Time your lessons to coincide with the shorebird seasons. For example, focus on migrations and migratory stopover sites when shorebirds are moving through your area or you are tracking them online. Teach about breeding plumage in the spring and summer when your children may spot local shorebirds in their breeding plumage.



"Explore the World with Shorebirds!"

Sample Home School Study Plan

Year 1

Introduction to Shorebirds

Shorebird Profiles

Adaptations

Build s Shorebird

Habitat

Shorebird Food Webs

Nesting and Breeding

Guard Your Nest

Colorful Changes

Migration

Migration Headache

Shorebird Research and Technology

Where Are the Birds Today?

Field Trips

Using a Field Guide and Binoculars

Shorebird Field Study

Cast a Track

The "Big Shorebird Picture"

Shorebird Values on the Line (to assess what your child thinks and believes)

Year 2

Introduction to Shorebirds

Get to Know the Shorebirds Puppet Show

Adaptations

What Can I Eat with This Beak?

Habitat

Match the Habitat Cards

Nesting and Breeding

It's a Tough Life

Migration

Migration Math Madness

Shorebird Research and Technology

Banded Birds

Field Trips

Using Field Guide and Binoculars (review)

Making Field Sampling Equipment

Mud Creatures Study

Data Analysis

The "Big Shorebird Picture"

Shorebird Poetry

Shorebird News

Year 3

Introduction to Shorebirds

Most Wanted: Shorebirds

Adaptations

Avian Olympics

Habitat

Map Your Habitats

Nesting and Breeding

Shorebird Bubble Map

Migration

Bird's-Eye View

Shorebird Research and Technology

You Be the Scientist

Field Trips

Sampling Local Shorebird

Populations

Data Analysis

The "Big Shorebird Picture"

What You Can Do for Shorebirds!

Shorebird Fair

Shorebird Values on the Line

These activities are more suitable for larger groups. Refer to Network with Other Home School Families for Large Group Activities on the previous page for suggestions on how to use these activities with your group.



How to Adapt “Explore the World with Shorebirds!” for Youth Groups

Why It Works

You Have Greater Time and Schedule Flexibility Than Most Groups

Most of the time, youth groups can visit sites without the complications of arranging bus transportation within the confines of a traditional school week and year.

The Community Likes to Get Involved with Youth Groups

There are usually plenty of interested parent helpers or community volunteers to chaperone group activities. Local civic organizations and businesses such as local bird clubs or bird stores are often eager to sponsor youth events.

Youth Groups Like Service Learning Projects

Since youth groups meet on an extended, regular schedule, it is relatively easy to start and finish a community service project.

Youth Groups Are a Popular Activity

Many sites are eager to attract the local youth group audience. Many children and their parents are looking to become part of a fun, yet educational, group.

Shorebird Field Trips Are a Logical Choice for Youth Groups

Planning a Shorebird Field Trip gives you many suggestions on having a fun and safe field trip. In the Field Trip Activities section, you will find pre-trip, onsite, and post-trip activities for your group. A variety of Field Trip Journal Pages is also located in the Field Trip section. Select the one(s) most suited to your group and your field trip needs.

Take as many shorebird field trips as you can! Ask parents to carpool to nearby shorebird field trip sites. Call ahead to arrange a time with the site's naturalist. If the naturalist is not available, look within your own community for a local shorebird expert to help with field identification and questions. Ask your local natural resource or extension agency about the possibility of talking with a bird biologist about shorebirds. Find out if anyone in your community is banding shorebirds.

Plan a Community Service Project That Benefits Shorebirds

Service projects can attract a lot of attention to your group and to shorebirds. Have your kids research the species of shorebirds that visit your area. What challenges do they face? Are there any controversial issues surrounding these shorebirds within your own community? How can your group help?

The more the project selection and planning is done by your kids, the greater their enthusiasm and commitment will be. Offer them suggestions and guidance when they need it, but resist the urge to take over. For a list of ideas and suggestions on how to plan and organize a community service project, look up What You Can Do for Shorebirds! in The Big Shorebird Picture section.

Ask Older Groups to Mentor Younger Ones

Most of the activities in *Explore the World with Shorebirds!* are most appropriate for children in grades 2 – 12, as written. This provides a wonderful opportunity for older groups to help teach younger ones. Pair up ages for field trips. Look for ways younger students can contribute to the productions and community projects that older groups develop. Use younger groups as an audience for shorebird stories, puppet shows, and art shows hosted by their older counterparts.



Adapting “Explore the World with Shorebirds!” for Nature Center Visitors

Why It Works

Your Audience Chose to Come

You already know that the people in your building are interested in the information and activities you have to offer. You will not have to spend a lot of time soliciting enthusiasm or participation.

Sometimes the Best Learning Happens in Mixed Groups

Most of the time, parents take charge of their children in mixed groups, allowing the presenter to focus on his or her presentation. Often it is the children’s enthusiasm that sparks parents’ interest and gives them permission to enjoy the games and activities you have planned. Most of the time family groups are comfortable “teams” in which even young children can participate with help from an older sibling or parent.

Flexibility

You can plan programs and activities year-round. You are not confined to a classroom or a set block of time. You can decide how big your group will be by setting size limits.

You May Already Have Shorebird Resources

Perhaps you have shorebirds feeding or nesting on-site. You probably arrange space to set up interesting displays and conduct programs and demonstrations. You might even have a naturalist who already knows something about shorebird biology and the identification of local species.

Host a Shorebird-Viewing Workshop

Invite bird enthusiasts to an afternoon or a weekend shorebird workshop. Plan your wildlife-watching workshop around the peak viewing sites and dates in your area. Include activities from *Explore the World with Shorebirds!* and follow up with shorebird viewing trips. Remember, many parents are looking for activities their whole family can enjoy together. Teachers, home school parents, and scout or club leaders are also audiences to consider.

Design a Shorebird Field Trip Teacher Packet

If your site is a frequent field-trip destination, design a field trip with a shorebird theme for your local teachers.

Here are some ideas:

- Assemble a field-trip packet that includes pre- and post- field trip activities, species profiles for shorebirds that use your site, and general shorebird information from the *Shorebird Primer*.
- Provide staff assistance, if possible, or line up volunteers to help with the on-site activities.
- Offer a pre-field trip orientation for teachers who would like to know more about shorebirds and the particular species they can expect to see at your site.

Use Shorebird Demonstrations, Presentations, and Games

Many activities in *Explore the World with Shorebirds!* are easily modified into presentations or demonstrations. Plan to include some of the activities below in your program schedule during peak shorebird viewing times.

Here are a few examples of activities that fit well with a mixed audience:

- **Wetland Metaphors**
(Classroom Activities — Habitat Section)
Introduce your audience to the role wetlands play within the ecosystem, their importance to shorebirds, and their value to human health.
- **Build A Shorebird**
(Classroom Activities — Adaptation Section)
This activity can be done using a volunteer from your audience. It is also engaging for a roaming interpreter. Simply dress up in all the shorebird adaptations described in the activity and roam the visitor center or observation area, asking your visitors to guess what animal you are. Explain your strange-looking adaptations and how they benefit you.
- **Shorebird Food Webs**
(Classroom Activities — Habitat Section)
Prepare a set of shorebird food web cards (found in the Student Appendix) that are suitable to your area’s habitat. Collect volunteers from within your center or advertise a food web activity that anyone can play.
- **Migration Headache, The Incredible Journey, and It’s a Tough Life**
(Classroom Activities — Migration and the Nesting and Breeding Sections)
These are all teaching activities that work well when conducted outside with a medium-sized group of almost any age. Read the rules carefully beforehand and assemble the props in a labeled box that can set on the shelf, ready to go at a moment’s notice.

■ **Get to Know the Shorebirds**
Puppet Shows

(*Classroom Activities — Introduction to Shorebirds Section*)

Use the sample script, modify it for your specific location, or write a new one for presentation in your nature or visitor center. Look for artistic volunteers to create the puppets and backdrop. This is likely to be especially popular with your preschool visitors and day care groups.

■ **What Can I Eat with This Beak?**
(*Classroom Activities — Adaptations Section*)

Set up a small “shorebird feeding station” somewhere in your center. Put out the beak-simulation tools as described in the activity. Use pie plates to hold “shorebird foods,” and ask your visitors to try to match the right style beak with the foods it is designed to help a shorebird eat. Be sure to leave the right answers and pictures of the shorebirds you are highlighting on cards at the table.

For example:

To simulate a Dowitcher probing for aquatic worms, bury gummy worms in sand and provide a pair of needle-nosed pliers to pull them out.

To simulate an Oystercatcher feeding on mollusks, leave a pair of heavy pliers for crushing open a nut or a shell

To simulate a Western Sandpiper picking insects off the surface of the beach, use a pair of tweezers to pick up grains of rice from a pie plate of sand.

■ **Host a Shorebird Contest**

Get out the word about the shorebirds in your area by sponsoring a shorebird contest, using one of the activities in *Explore the World with Shorebirds!*

■ **Most Wanted Shorebirds**
(*Classroom Activities — Introduction to Shorebirds Section*)

Invite local school children to design a “Most Wanted Poster” for shorebirds in your area. Then select a variety of posters to showcase at the nature center or around town. Perhaps a local printing company would donate the cost of printing posters of the winning artwork.

■ **A Year (a Day or a Week) in My Life as a Shorebird**
(*Classroom Activities — Introduction to Shorebirds Section*)

■ **Host a writing contest** that describes the life of a favorite shorebird. Ask your local newspaper to print the winning article and a little more about where and when readers can see this shorebird.

■ **Shorebird Poetry**
(*Classroom Activities — The Big Shorebird Picture Section*)

Sponsor a community poetry contest. Ask local businesses to contribute prizes. Ask you local paper to print the winning poems.

■ **Shorebirds on Display**
(*Classroom Activities — The Big Shorebird Picture Section*)

Invite scout troops, science clubs, and/or schools to design a display that communicates information about a controversial shorebird issue, little known facts about shorebirds, or identification information about the birds visiting your area.

■ **Organize a Shorebird Service Project on Your Site**

The opportunities for service projects on your site are really only limited by your own imagination and the willingness of your community to lend a hand. Litter clean-ups are pretty simple and fairly typical, especially in the spring when snow melts and people are ready to get outside and enjoy the weather. Go beyond what you may be familiar with and ask yourself “What does our site really need to benefit shorebirds?” If you need concrete ideas, look up *What You Can Do for Shorebirds!*

