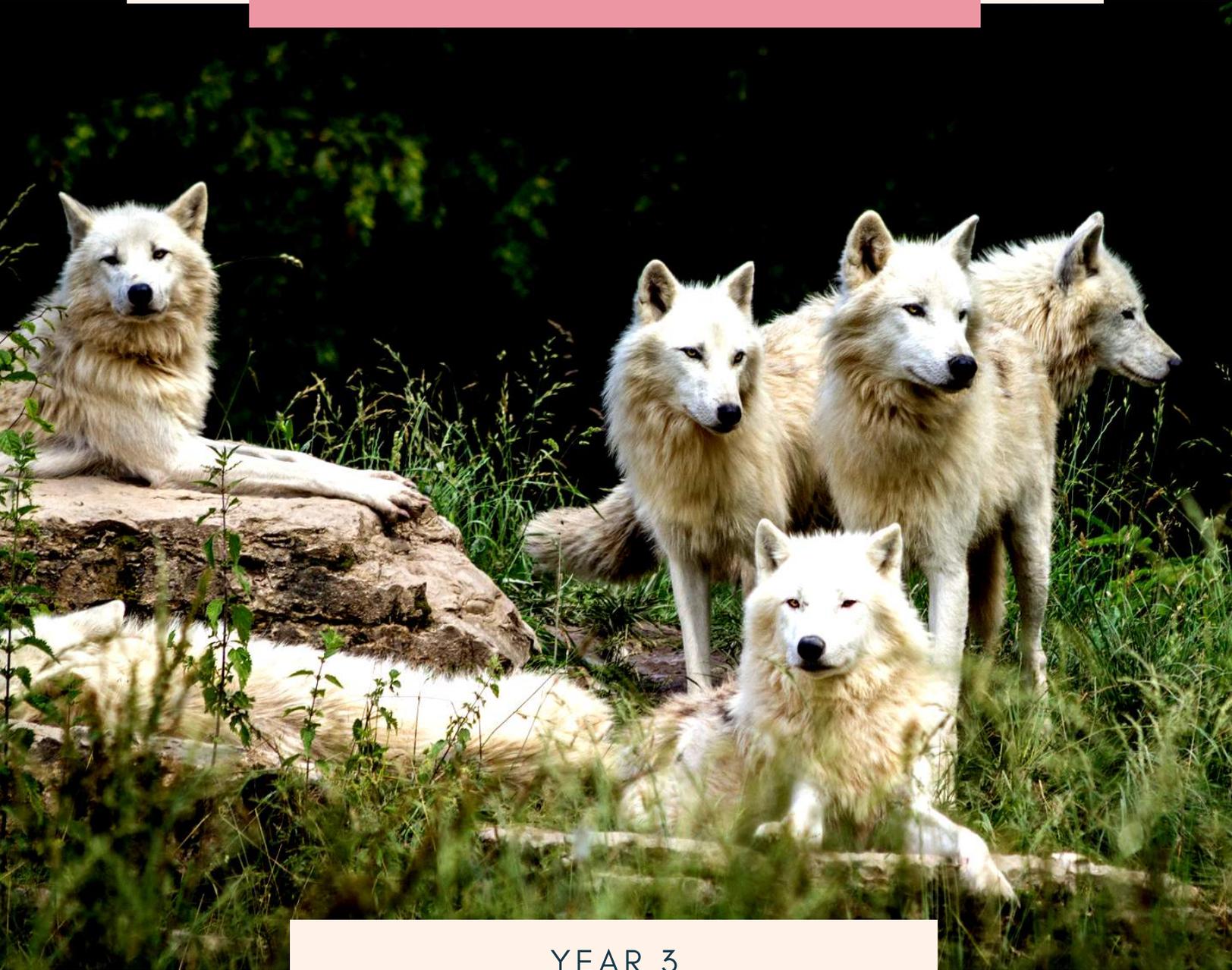


BLOSSOM & ROOT

ELEMENTARY SCIENCE // YEAR 3

Wonders of the Animal Kingdom

LABORATORY GUIDE



YEAR 3

Exploring the Animal Kingdom



www.blossomandroot.com

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To report errors contact kristina@blossomandroot.com
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Blossom & Root

Elementary Science,
Year 3:

Wonders of the Animal Kingdom

A Complete, Hands-On Secular Science Curriculum

Grades 1 - 4

Blossom & Root Elementary Science Year 3: Wonders of the Animal Kingdom

By Kristina Garner - www.blossomandroot.com
9462 Carlyle Park Place
Highlands Ranch, CO 80129

Find Us on the Web at <https://www.blossomandroot.com>

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Wonder No. 1: The Animal Kingdom

For the Outdoor Learners:

Nature Hike: A Year of Animals

What You'll Need:

- A place to hike, play, and wander outdoors

What to Do:

Kick off a year of animals with a nature walk together. You will notice that the majority of the activities for "the outdoor learner" this year are built around a hike, outdoor observation session, or scavenger hunt. Some of the best ways to learn about animals is to experience them "up close and personal," to make observations about where they live, what they eat, and how they change their behavior or appearance during the year, and to witness how animals and plants work with (and sometimes against) each other.

During these hikes, observation sessions, and scavenger hunts, you will be given a topic to focus on (insects, birds, etc.) but your time outdoors needn't be exclusively focused on that topic. It's important to allow your child to follow rabbit trails, play freely, and make their own observations, too. Think of the prompts and scavenger hunts as a platform to spring from as you head out, not a fixed agenda.

On this first hike, initiate some conversations about the animals you see as you explore. If you're doing this unit in the winter, talk about the absence of certain animals, too. Why aren't there as many insects out at this time of the year? Are there certain birds that have stuck around while others have flown away? Try to prompt exploration with all of the senses--rub tufts of fur found clinging to a thorny bush between your fingers, run a discovered feather along your arm, talk about various smells you're experiencing. Can you hear the song of crickets slowing in the cooler months? And so on.

If your child's interest is sparked, run with it, even if it doesn't directly concern animals. The ultimate objective for this year is for your child to experience the natural world. True, the focus is on the animal kingdom, but all living things, and their place amongst rocks and rivers, are all connected and provide a rich education, indeed.

For the Table-Lab Crowd

Organizing Animals Challenge

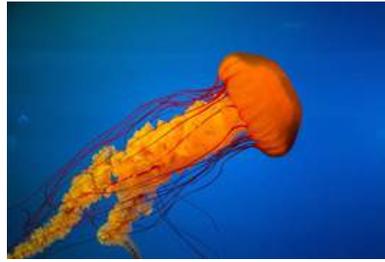
What You'll Need:

- Index cards or scrap paper
- Marker, pen, or pencil
- Scissors
- The "organizing animals challenge" page that follows this, printed out

What to Do:

1. Print out a copy of the "organizing animals challenge" page (see next page.)
2. Have your child cut out the various pictures of animals. Spread them out on the table.
3. Ask your child how they might organize all of these animals into different groups. Perhaps they can imagine they are designing a zoo and must figure out a way to group the exhibits. Or maybe they are a famous explorer, trying to organize all of their animal discoveries to present to the world. Try not to limit or guide this process--there are many different ways the animals can be organized. (Feathers vs. scales vs. fur, animals of land vs. animals of the sea, predators vs. prey, number of legs, etc.)
4. Have your child write labels on index cards or scrap paper, using the organization categories they've decided on. Then instruct them to place each animal they cut out into the appropriate categories. When they finish, talk about other ways they might have organized the animals.

Organizing Animals Challenge



Wonder No. 1: The Animal Kingdom

For the Crafts-and-Projects Families:

Poster: Classifying a Favorite Animal

What You'll Need:

- A piece of poster board, or a large sheet of paper
- Markers or crayons
- Access to the internet

What to Do:

1. Ask your child to choose a favorite animal.
2. Go to <https://a-z-animals.com/> and type that animal into the search bar on the right-hand side of the homepage.
3. The website will pull up a page all about the animal you chose. On one side, it will tell you lots of information about that animal's habitat, diet, appearance, etc. On the other side, it will tell you the animal's classification information: kingdom, phylum, class, order, family, genus, and then many details about this specific species. *We will use this tool more during our Wild Files weeks at the end of the year.*
4. Have your child draw a picture of their animal on their poster, then have them write the animal's species name and all of the classification information next to their drawing.
5. Tell them that each category of classification tells us something about that animal. We will learn a lot about what these different classifications mean as we study many different animals during the year. You can share with them this example: an arctic fox is in the animal kingdom. It's in the phylum Chordata, which means it has a spinal cord. It's in the mammal class, which tells us that it's warm-blooded and feeds its young with milk made in the mother's body. It's in the order Carnivora, which means that meat is part or all of its diet. It's in the Canidae family, which means it's a dog-like, meat-eating mammal, related to wolves, etc. And it's in the genus *Alopex** along with several other foxes.

Arctic Fox



Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Carnivora

Family: Canidae

Genus: *Alopex*

Species: *Alopex lagopus**

*sometimes considered *Vulpes lagopus* instead

Wonder No. 16: Seabirds, Waterbirds, & Shorebirds

For the Outdoor Learners:

Watching for Waterbirds, Shorebirds, or Seabirds

What You'll Need:

- A place where you can visit or hike near water
- A bird guide (optional)
- A pair of binoculars and a phone (optional)

What to Do:

1. Go for a bush walk / hike, or a field trip to a lake, river, pond, seashore, estuary, or similar area with water.
2. Spend time watching for waterbirds, shorebirds, or seabirds. If you've brought along a bird guide, try to find the ones you see in the guide to identify them.
3. If you've brought along binoculars, be sure to look for birds that aren't out in the open. Look on cliff-sides, in treetops, in brambles or rushes, and floating on the water.
4. Be sure to use other clues to find and identify birds. Listen for bird sounds--you can even record them with a phone or tape recorder. Look for droppings, nests, and tracks. Look for feathers or broken eggshells from hatchlings.
5. Take pictures of the birds and signs of birds that you find. Write down all species you were able to identify together.

**This is a fantastic opportunity to enjoy a long, leisurely day playing or having a picnic while you search. Often, our chances of seeing or hearing birds increases significantly when we can spend more time in one area.*

For the Outdoor Learners:

Dig, Scoop, and Filter

What You'll Need:

- A pair of pointy sticks
- A shovel
- A colander
- A place with sand, small pebbles, or dirt near water (you can also use a large backyard sensory bin)
- A handful of shells or unique rocks that stand out from the sand / soil / pebbles

What to Do:

1. Hide the shells / unique rocks among the sand, soil, or pebbles near the water. Tell your child to pretend that these are small crabs or other creatures and that they are a hungry bird looking for lunch.
2. Ask them to try to catch as many of the creatures as possible, using one of three beak types. They can use a point beak (the sticks), the scooping beak (the shovel), or the filtering beak (the colander.) But they cannot use their hands to pick up the food. They must move the food from one place to another using only their chosen beak.
3. Let your child experiment, and switch beaks, as needed. Once they've successfully gotten the food, try again but change either the type of food (maybe use pinecones or something similar) or the setting. Maybe submerge the food into the water, or bury into the mud at the bottom of the water. Does this change the type of beak that works best?
4. Continue experimenting with different food and setting variations. Allow your child to set up a challenge for you, too.

Wonder No. 16: Seabirds, Waterbirds, & Shorebirds

For the Table-Lab Crowd:

Make a River Delta in a Pan

What You'll Need:

- An aluminum tray (like you would cook a turkey in)
- Sand or corn meal
- Blue glass beads or craft beads
- Play-dough, modeling beeswax, or plastic "river creature" toys
- Moss, sticks, pebbles, etc. collected from your yard or the craft store

What to Do:

1. Read to your child about the importance of river deltas to birds and other wildlife. This website is a great resource for learning about the Mississippi River Delta, specifically:
<http://mississippiriverdelta.org/whats-at-stake/wildlife/>
You can also use other online resources for a specific delta, using a Google search.
2. Spend a little time looking at pictures of deltas (recommended resource:
<https://www.bbc.co.uk/bitesize/guides/z3h9v4j/revision/3>.)
3. Provide an aluminum tray (like you would use to cook a turkey), sand or corn meal, blue glass pebbles or craft beads, and other supplies gathered from your yard or a craft store.
4. Allow your child to construct a model of one kind of delta, using the supplies provided.
5. As a bonus, they may wish to model some delta birds and other wildlife using play-dough or modeling beeswax. Alternatively, they can simply play with their delta using plastic "river creatures" toys.

For the Table-Lab Crowd:

Hunting Like a Shorebird

What You'll Need:

- A pair of chopsticks
- A spoon
- A slotted spoon or pasta scoop
- A tray or pan full of brown sugar, corn meal, or similar gritty medium
- A bag of gummy worms or gummy fish

What to Do:

1. This activity is basically the indoor version of the "Dig, Scoop, and Filter" activity for outdoor learners on the previous page.
2. Fill a baking pan or tray with brown sugar, corn meal, or something of a similar consistency. Hide the gummy worms / gummy fish in it.
3. Tell your child that they are a hungry bird looking for food on the shore. They must find food using only their "beak." They need to choose a beak to begin--a spearing beak (the chopsticks), a scooping beak (the spoon), or a filtering beak (the slotted spoon or pasta scoop.) They can't use their fingers to get the food, only their beaks. They can, however, switch beaks if one isn't working out.
4. Allow them to play and experiment with feeding themselves gummy worms or fish from the shore, using their assorted beaks. Ask them which beak is the most effective at getting the treat without the grit. (You may want to have a glass of water for them to rinse each treat in before they eat it.)
5. Ask them if a different beak would work better under different circumstances. For example, what if the treats were buried in mud beneath the water?

Wonder No. 16: Seabirds, Waterbirds, & Shorebirds

For the Crafts-and-Projects Families:

Paintings of Local Waterbird, Shorebird, or Seabird Species

What You'll Need:

- Paint in a variety of colors (watercolors, gouache, or acrylic)
- A variety of paint brushes
- Paper appropriate for use with your type of paint
- Pencils to sketch first
- Pen to outline (waterproof, optional)
- Local bird guide, binder clips to hold it open

What to Do:

1. Help your child to find a picture of a local seabird, waterbird, or shorebird in their bird guide. Help them to apply the binder clips to the pages of the book to keep it propped open for them.
2. Help your child to set up their painting area with all of their supplies.
3. Instruct your child to lightly sketch in the bird they plan to paint. You may need to help or guide them a little at this stage. Focusing on shapes, rather than lines, is usually easier for elementary-aged learners.
4. Once they are satisfied with their sketch, they can begin to paint. Be sure to have them label their finished painting with the common and scientific names of their chosen bird. Talk about any other information their guide provides for their bird. What kind of food do they eat? Where do they make their home? Do they migrate?
5. Repeat as many times as your child would like.

For the Crafts-and-Projects Families:

Albatross Wings

What You'll Need:

- A tape measure and duct tape
- Several discarded cardboard boxes, or other scrap cardboard
- A box cutter or sharp craft scissors (**parents only**)
- White paint and a paint brush
- Strong twine or string

What to Do:

1. Look at the picture of an albatross wing (next page.) Pay close attention to the overall shape of the wing.
2. Fit together several pieces of cardboard that will become each wing. Each wing will need to be around 4 1/2 feet long, so you'll either need to use a very large box, or tape together several pieces with strong tape (like duct tape.)
3. Help your child to measure out 4 1/2 feet from the top to the bottom of each wing, then help them to draw in a basic wing shape similar to the shape of the albatross wing (wide at the top, tapered at the bottom.)
4. **Parents:** Use the box cutter or scissors to carefully cut out each wing. Tape pieces together as needed.
5. Have your child paint each wing white.
6. Once the paint dries, poke holes along the wing to run the twine through. Use the twine to tie each wing to your child's arms, with the wide part at the shoulder and the narrow part extending past their fingertips. Allow them to play freely. You may want to let them know that an albatross is usually between 35 and 51 inches tall, with a 10 foot wingspan. They may want to measure their own height and new wingspan to see how close they are to the size of a real albatross.

Wonder No. 16: Seabirds, Waterbirds, & Shorebirds

Albatross Wing Shape

