

FOSS ANIMALS TWO BY TWO MODULE—LOW-TECH

No technology needed for activities Investigations 1–4

Hello Teachers and Families,

Attached are the low-technology activities for guardians to do at home with students. For the Animals Two by Two Module, you will go outside a number of times. You will go outside and do four observations of birds in your neighborhood. For the second exploration, you will look for other living animals on four separate times. This packet appears to only have two activities, but there are four observations that go with each.

We are asking you to go outside with your child and get a break from screen time. Of course, you will only do these outdoor activities if it is safe to walk outside, and you are practicing social distancing 6 feet from people who do not live in your home. If it is unsafe to go outside, do what you can by looking out a window, ideally an open window, or by sitting on a porch or front steps.

We would like to take a moment to thank both parents and teachers for keeping science alive in your students' and children's lives. We truly hope that these activities bring some curiosity and wonder to their lives during this challenging time.

Best to you,

The FOSS Project staff at the Lawrence Hall of Science

HOME/SCHOOL CONNECTION

Investigation 1: Goldfish and Guppies

Review

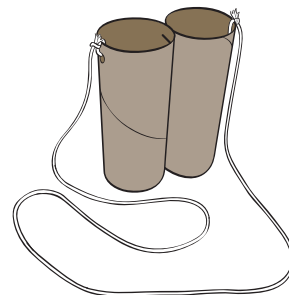
If your child was learning this module at school, they would have welcomed goldfish into their classroom. They would have learned about the structures of goldfish, how to care for them, and about their behaviors. After getting to know the goldfish a second very similar animal would have been introduced—guppies. Having a second organism to compare to the first helps children better observe and learn about both of them.

In this first investigation, students also study schoolyard birds. Today, you and your child will begin a long-term investigation of your neighborhood birds.

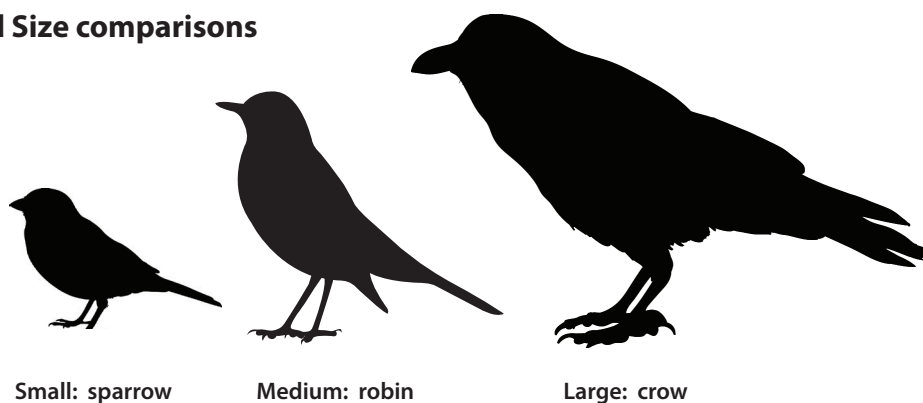
Exploration (Go outside four different times to observe birds)

Focus question: What types of birds can we see around my home?

1. Ask your child if they have seen any birds lately. If so, where were they? Record these locations on a piece of paper.
2. Explain that you are going to go outside to look for birds. You can use real binoculars if you have them or make some out of toilet paper tubes that you staple or tape together and then staple a string to either side.
3. As you go outside it is not necessary to know the names of all of the birds, but you can talk about their size, their colors, how they fly, their behavior, their structures, how they communicate, and where you see them.
4. You can talk about the relative size. Are they small like a house sparrow? More of a medium size like a robin? Or large like a crow?



Bird Size comparisons



(Continued on the next page)

HOME/SCHOOL CONNECTION (Continued)

Investigation 1: Goldfish and Guppies

5. Create a t-chart for collecting bird counts in a notebook or on a piece of paper. Something like this (leave more rows), grown ups can do the writing:

Bird size	Tally mark (for each time you see that bird)
1. sparrow, small	III
2. hawk large	I
3. jay, medium	IIII

6. Try and go outside four times to observe the birds. After each exploration have your child draw one of the birds they saw in their notebook. You can fold a few pieces of standard 8.5 by 11" paper in half and staple them together to make a notebook. You can support your child by writing any words they would like to record about the bird they are drawing.
7. Have fun observing birds. You will likely see the most birds earlier in the day or at the end of the day. Repeat steps 3-6 each time you go outside.

Possible follow up explorations:

- Make a bird feeder out of containers from the recycling bin, perhaps a clear plastic juice container. Look online for good ideas.
- Go online and explore the resources at The Cornell Lab of Ornithology to try and identify birds. <https://www.allaboutbirds.org/guide/search#>
- Merlin is a simple bird ID tool created by the Cornell Lab of Ornithology for use on mobile devices. You can also use the Cornell Lab of Ornithology website to get help on bird identification

HOME/SCHOOL CONNECTION

Investigation 2: Water and Land Snails

Investigation 3: Big and little Worms

Investigation 4: Pill Bugs and Sow Bugs

Review

If your child was learning in school with this module, they would have had firsthand experiences with pairs of organisms—water and land snails, earth worms and red worms, and pill bugs and sow bugs. Instead of sending you outside with your child to try and find each of these on separate occasions, **we would like to encourage you to go outside and look for whatever you can find, on four different occasions.** With any luck, you will find snails, worms, and isopods. All three of these types of animals can be found throughout the United States. This activity appears as one opportunity, but the intention is that you go outside four different times. You will likely find different organisms each time you go out. It doesn't really matter what you find—what does matter is that you and your child observe carefully and ask questions about what you find.

Follow these safety rules.

If you don't know what something is, don't pick it up. If you're holding an animal, like a snail, be very gentle with it. Treat all living things with care.

Materials

- Some kind of notebook, fine to take four pieces of stacked printer paper, fold them in half and staple along the seam, use back and front of each page
- A container to hold small harmless animals (recycled containers with a lid)
- A spoon (metal or plastic)

Investigation

1. Gather your supplies and head on out to find an outdoor space to search for small animals. Some places you might want to look:
 - In and under dried leaves on the ground (leaf litter)
 - Under rocks, under moveable pieces of wood, under flower pots or things that have been sitting in one spot for a long time
 - On leaves or on flowers
 - In a garden, on plants and in the soil
 - On a rainy day, worms on the pavement.

(Continued on the next page)

HOME/SCHOOL CONNECTION (Continued)

Investigation 2: Water and Land Snails

Investigation 3: Big and little Worms

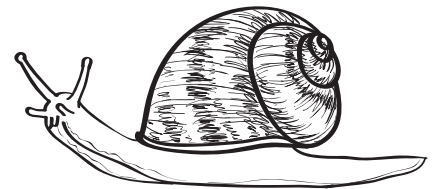
Investigation 4: Pill Bugs and Sow Bugs

2. When you find something of interest, if you know what it is, you can put it in your container, either picking it up with your fingers or using the spoon. Keep the closed container out of the sun (it will heat up quickly!) Observe the animal carefully. If it is a snail, an isopod or a worm try to find a second to compare it to. Ask the questions below about each when you find one.
3. If you cannot find the things below, what else could you find? Many of the questions below will work for other animals too.
4. When you have found something of interest and you have asked lots of questions about it, you can make your notebook entry about that animal. Your child can draw what they see and together you can write words to describe the structures of the animal. It is fine to write for your child.

Is it a snail? Are there two snails to compare?

Here are some questions to ask about snails.

- How do snails move?
- What do snails do when you put them in a container?
- Do snails move up? down? sideways?
- Can snails travel upside down? backward?
- How does it feel when a snail moves on your hand?
- What does the snail do when you pick it up by the shell?
- How can you tell where a snail has been? (It leaves a mucous trail.)
- Can you compare slugs to snails? How are they the same? How are they different?



Follow up activity with snails.

- Consider bringing snails into your home to observe for a few days. Use a large plastic container with a lid from recycling, perhaps one that once held lettuce or pretzels. Poke a few holes in the container lid with a push pin for air. You can add some lettuce or pieces of carrot, sprinkle some water on the leaves, and observe the snails. Return the snails to where you collected them when you're done with your observations.

(Continued on the next page)

HOME/SCHOOL CONNECTION (Continued)

Investigation 2: Water and Land Snails

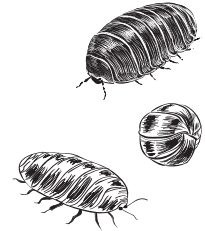
Investigation 3: Big and little Worms

Investigation 4: Pill Bugs and Sow Bugs

Is it an isopod? Are there two isopods that you could compare?

Here are some questions to ask about isopods.

- Which end is the head? Which end is the tail? How do you know?
- How many legs does it have?
- Does it look the same on the top as on the bottom?
- What color is the carapace (the hard outer covering) how many sections does it have?
- Where are the antennae?
- What happens if it flips onto its back?
- Can it roll up into a ball? If so, why do you think it does that? (some isopods roll up and some don't.)
- Are all isopods the same?
- Where do isopods live?



Is it a worm? Are there two worms to compare?

Here are some questions to ask about worms.

- Which end is the head? Which end is the tail? How do you know?
- Does it have eyes?
- Do all worms look the same? How are they different?
- Do they move the same way?
- Are they the same length?
- Are their bodies shaped the same way?
- Do you think they are the same kinds of worms? Why or why not?
- How do they feel? Can you feel any stiff hairs (bristles) on large worms?

