mystery science

Lesson: “How could you get more birds to visit a bird feeder?”

VIDEO TRANSCRIPT

EXPLORATION VIDEO 1

Hi, it's Doug! When I was young, my family had a bird feeder in our backyard that my mom or my dad would fill up with seeds. Every now and then, I would notice these little brownish birds coming to eat the seeds, but most of the time, I didn't pay much attention to the bird feeder. Then, one morning, while I was eating breakfast, I caught a glimpse out the window of something bright red near the feeder. These birds were so red, they almost looked like fire. I grabbed my binoculars so I could see one of them close up. Looked like this, wow! It was so colorful, it was like a bird you might see in a pet shop. My dad showed me a book, where I could look up all the birds that lived in our area. A field guide it's called. I looked through the book and found a red bird just like the one I'd seen out the window. It was called a northern cardinal. Now I was curious. I started paying attention to the bird feeder and kept my binoculars close by. Sure enough, a few days later, I caught a flash of a different color. This time, a blue-colored bird. Here is what I saw through my binoculars. Just look at all those different blue colors. According to my field guide, this bird was called a blue jay. I flipped through the book some more, and I wondered what other colorful birds would visit the bird feeder? Like, maybe a bright yellow bird, like this goldfinch. Or a bird with bold red, black and white colors like a red-headed woodpecker. Or maybe something almost rainbow-colored, like this wood duck. One of my favorite sections in the bird guide was this, the raptors. Those are the birds that eat meat, birds like falcons, hawks,

and eagles. I really wanted to see a hawk at our bird feeder. When I told my parents about the birds I wanted to see, they said we wouldn't get all the birds in the book to come to the feeder. But why not? Which species of birds do you think would visit the bird feeder?

EXPLORATION VIDEO 2

So which of these birds came to our feeder? Goldfinches definitely did, in fact, finches of all kinds were the most common visitors. They're just the right size to fit on the perches on the feeder, the little pegs there, and to reach inside and get the seeds. Now, what about woodpeckers? You might know that most woodpeckers don't eat seeds like we had in the feeder. Instead, they hammer holes into tree bark to find insects. But actually, sometimes we did get woodpeckers at our bird feeder. I got really excited whenever a woodpecker visited because they didn't come to the feeder that often. Now, I would've loved to see a colorful duck at our feeder, but no ducks ever came. I realized, even though ducks would probably love to eat seeds, they could never fit onto the little perches on a bird feeder. Plus, their beaks are wide, far too big to fit inside the little holes to get the seeds. Okay, but what about raptors? Birds like eagles, hawks, and falcons. Did they ever come to the bird feeder? Well, hawks eat meat, not seeds, so they're not interested in the food from a bird feeder. But watch this. Oh, did you see that? What just happened, let’s watch that again in slow motion. Wow, there's a little bird at the feeder and the hawk just tried to catch it. So you see, sometimes hawks do come near a feeder; not to eat seeds, but to try to eat other birds. Now, one day my aunt came over with a new bird feeder for us. One that would attract a different species of bird. She said this was a hummingbird feeder. It looked very strange. I asked her, "Where do you put the seeds?" but she told me this kind of bird feeder didn't hold seeds. So, how would it work? How would hummingbirds eat from it? What do you think?

EXPLORATION VIDEO 3

This kind of bird feeder, called a nectar feeder, is perfect for hummingbirds. You fill it with sugar water that the hummingbirds can drink. Do you see how the hummingbirds' long, thin beaks fit perfectly into the tiny openings at the bottom of the feeder? They sip the sugar water from the feeder, just like they would sip nectar out of flowers. So, we've seen that not all birds like to come to bird feeders. Hummingbirds only come to special bird feeders with sugar water. Raptors like hawks only come by to try to catch other birds at the feeder. The species of birds you see at a bird feeder depend at least partly on what kind of food you put in it. By far, the most common birds that come to feeders are the birds that like to eat seeds. But it's not just about the food. It's also about how a bird can reach the food. Let's watch some videos of different bird feeders. What do you notice about how different birds are reaching the seeds?

ACTIVITY INTRODUCTION VIDEO

In today's activity, you're going to design a bird feeder, a place for birds to come and get a snack. Different kinds of bird feeders bring in different species of birds. Like this one, it's just a big flat tray full of seeds. Larger birds like blue jays and cardinals stand right on the tray to eat. But here's another kind of bird feeder. It's long straight up and down and it has perches, little pegs where the birds can stand kind of like the branches on a tree. Small birds like goldfinches love these feeders. They reach in there and grab the seeds. Woodpeckers usually like a different kind of bird feeder. They like to stand right on the side of tree trunks when they eat. So they like bird feeders with sides they can hang on to with their feet. Here's a close-up. You can see how it's feet grab on to something on the side. All of these different feeders are solving the same problem. How can we bring birds up close so that we can see them? To plan your bird

feeder, you need to think like a bird. First, you're going to think about what kind of birds do you want to come to the feeder? And what do those birds need? Then you'll draw a few different ideas of what your bird feeder could look like. After that, you'll build a bird feeder. Now the version you build will be a prototype. That's another way of saying a simple first version of something that helps you figure out if your ideas will work. A prototype can be smaller than what you'd really need for real birds. And a prototype can be made out of cheaper materials that are easier to build things with than your final materials would be. I'll show you how to get started, step by step.

ACTIVITY STEP 1

Find a partner. Each of you will build your own bird feeder, but you'll talk about your ideas with your partner. If you're not part of a class, you can make a bird feeder on your own. When you're done with this step, click the arrow on the right.

ACTIVITY STEP 2

Get these worksheets for each person. You'll get more supplies later.

ACTIVITY STEP 3

Discuss questions 1a, 1b, and 1c on your worksheet with your partner, then write your answers. You can choose any of the birds on the worksheet or any other bird you know as long as you know what that bird eats. Your answers may be different from your partner's. Remember, each of you will make a bird feeder and they can be different.

ACTIVITY STEP 4

One thing that might keep birds away from your feeder is danger. A big danger for birds is this, cats. Discuss with your partner, then answer question 1d on your worksheet. Your answer might be different from your partner's. That's okay.

ACTIVITY STEP 5

Now fill in the blanks on question number two on your worksheet. This is your problem statement. It reminds you of what you want to build, and what it needs to do.

ACTIVITY STEP 6

Do question number three on your worksheet. Talk with your partner about what your bird feeder could look like. Remember, you're sharing ideas, but each of you is making your own bird feeder. Draw at least two pictures of different ideas. Be sure your pictures show where the food will be, where the birds will stand, and what will keep the birds safe from cats. Your pictures don't have to include every detail. Sometimes you figure out the details by building.

ACTIVITY STEP 7

Find out what building supplies, fasteners, and tools you have. Here's what we used.

ACTIVITY STEP 8

Look at your drawings. Talk with your partner about which bird feeder you can build with the supplies. Then get your supplies.

ACTIVITY STEP 9

Here are some ideas to get you started. You can draw a new plan, or just start building. If you need help, ask your partner. If you get stuck, ask your teacher for an inspiration sheet.

ACTIVITY STEP 10

When you're done building do a show and tell. Get a new partner, then tell them about your bird feeder. You can use these sentence starters and tell them what kind of bird you made your feeder for, what it eats, where it will stand when it eats, and how your feeder will keep the birds safe from cats.

ACTIVITY STEP 11

Do question number four on your worksheet. Talk with your new partner about how you could make your prototype into a real bird feeder that can go outside and stay in one piece in the wind and rain. Then, watch the final video.

WRAP-UP VIDEO

Today you created your own bird feeders. You had to think about how to design a feeder that would be easy for birds to use. You had to figure out things like where would birds stand? How would they reach the food? Here are some of the bird feeders that we designed. These tray feeders are flat and open for birds that like to stand in the feeders and eat the seeds. Those are birds like jays and cardinals. We also made feeders with pegs, places to perch. For that, we used chopsticks and pencils as our perches. These feeders would be good for birds like goldfinches that like to stand on small pegs to reach the seeds inside the feeder. Lastly, we

designed feeders for woodpeckers, which like to eat while holding on to the sides of the bird feeders with their feet. For that, we used pipe cleaners on our feeders to make little handles where woodpeckers could grab onto. These were just some of the ways you could have designed your feeders. Maybe you came up with something totally different. The purpose was to create a prototype—a first version of a bird feeder to test out your ideas. You built your prototype out of materials like paper cups and plates and other things that are easy to find in a classroom. These aren't the kinds of materials that would hold up outside in the rain or in the wind. But you could use your prototype to design a real feeder made out of sturdier, more expensive materials, like wood or metal or plastic, and then hang it up to see which birds it attracted. We've seen how bird feeders attract different species of birds depending on which kind of food they use, whether a feeder has seeds, like this one, or sugar water, like this one. And some feeders can even have fruit, like bananas or oranges. But it's not just about the kind of food. It's also really important to think about how the feeder is designed. Even if feeders have the same kinds of food, different feeders are designed for different birds, with places for birds to stand or perch. And don't forget, the species of birds you'll see also depends on where you live. In this Mystery, we looked at birds in North America, like jays and cardinals. But in other parts of the world, you can find other species of birds at bird feeders. For example, in Australia, you might find rainbow lorikeets visit your bird feeder. Or, in South America, you might have toucans. To learn more about what species of birds you have in your area and what they like to eat, you can check out the link to the Project FeederWatch in the Extras. Have fun and stay curious!