mystery science

Grades K-5
Mini-Lesson + Activity: “Why are so many people scared of bugs?”

VIDEO TRANSCRIPT

MINI-LESSON VIDEO 1

[Video Call]

- Hi, Doug!

- Hi, Hunter!

- I have a question for you. Why are so many people scared of bugs?

- That's a great question.

Rather than me be the one to answer it though, I know the perfect person for this question. His name is Dr. Samuel Ramsey. He's a scientist who studies bugs. I know he's got some thoughts about this question. Dr. Ramsey, what do you think?

Why are some people afraid of bugs? That is a great question. Let's talk about bugs. Now today, when I say bug, I'm using it in the non-science sense of the word, as in things that some people call creepy crawlies, you know, the stuff with a whole bunch of legs. Have you ever seen a bug fly or crawl into a crowded place, like maybe your classroom? If you did, I bet you noticed a lot of different reactions. There were probably some people who were pretty freaked out. Some people were probably pretty calm about it. Some people may have gotten excited or even tried to catch it. How about you guys? How do you feel about bugs?

MINI-LESSON VIDEO 2

Well, I don't know how you feel about bugs, but believe it or not, when I was really little, around seven, I used to be terrified of them. I would have nightmares about bugs and make my dad come into my room and stomp on imaginary bugs before I could go to sleep. I was so scared that I didn't even want to go outside anymore. Now, most people aren't that scared around bugs, but a lot of people think that they're pretty creepy and crawly and pretty much stay as far away from them as they can. Why is that? Could it be that some people feel like bugs are a little dangerous? Think about the scary-looking spiders or creepy crawlies you've seen in the movies, or maybe you've seen stinging bugs, like scorpions, bees, or wasps in real life. It's easy to understand why some people might get a little nervous around them. These creatures can actually cause pain. But here's the thing—most bugs aren't dangerous at all. Consider this bug. Up close, it might look scary to some, and with a name like dragonfly, it sounds ferocious. Can they bite? Can they sting? But guess what? Dragonflies love to eat. They love eating bugs that you personally might find annoying, like mosquitoes and flies. They're amazing hunters. To catch their prey, they make a little trap with their legs and hold the bugs in place with their mouths. Oh, and just think about bees. Bees are one insect that probably cause people the most worry. Who wants to be stung by a bee? It might even be tempting to imagine a world where there are no bees. But if that really happened, it would be terrible. Bees are one of the most helpful bugs of all. They help flowers produce seeds and fruit. It's called pollination. So without bees, we wouldn't have many of the beautiful flowers that we love to look at, or the foods that we eat, like apples, peaches, strawberries, and melons. So, many bugs aren't really all that scary—they're helpful! It's no coincidence that a lot of superheroes like Spider-Man and Ant-Man are named after bugs. In fact, some bugs have incredible skills that almost seem like

superpowers. Check out this guy, it's called a Hercules beetle. These beetles can lift things that are 850 times heavier than their own body weight. That would be like you lifting 10 elephants stacked on top of each other. Oh, and this insect, this is one of my favorites. It's an atlas moth. They're masters of disguise. Don't these markings on the wings make them look just like like a Cobra? That helps scare animals away that might try to eat them. Consider this, you and me, we have only two eyes, but bugs have a lot more than that. Have you ever noticed how hard it is to catch a fly? That's because two of their five eyes are separated into thousands of tiny little sections, so they can never miss when something moves, even a little bit. And they can see all around them, even behind their heads. But here's something interesting that I noticed. Maybe part of why these creatures seem scary is because they're so different from us. Being different from us isn't a reason to be scared. I mean, I would guess that I look different from some of you and maybe you look different from some of your friends, but isn't it differences like this that make life so interesting? I mean, some bugs are so amazingly different that they've inspired artists to create a lot of aliens that we've seen in science fiction movies, in video games, and not just the scary ones. The incredible strangeness of bugs has inspired some really fun characters too, like Caterpie, a character from Pokemon. Doesn't it look just like this caterpillar in real life? I know that bugs still might look scary to some but learning more about them can make you less scared. At least, that's what happened to me. One summer, my parents dropped me off at the library and encouraged me to hang out in the bugs section. So that's what I did. I read every bug book I could find. And before that summer ended, I wasn't so afraid. I even remember riding in the car with my mom and saying to her, I want to be an entomologist when I grow up. That's what you call a bug scientist. And here I am today. Thanks for listening. And for giving bugs a chance. I know they're a lot different from us, but that's what makes them so awesome.

That's all for this week's question. Thanks, Hunter for asking it.

And thank you Dr. Ramsey for being our guest. Now, we have something special for this week's episode. My friends and I here at Mystery Science created a special activity where you can create your own creepy crawly. I hope you'll try it. Have fun and stay curious!

ACTIVITY INTRODUCTION VIDEO

In today's activity, you're going to cut creepy crawly, many-legged monsters out of paper, like these centipedes. Maybe you're thinking it looks like a lot of work to cut out all those legs, but we're going to show you a special trick that lets you cut out monsters like these in no time at all. If you've ever cut out Valentine's hearts or paper snowflakes, you've used a trick like the one we're going to show you. We'll start by making a super simple centipede. Then you'll use the trick to cut out many-legged monsters of your own design. We'll show you how to get started, step by step.

ACTIVITY STEP 1

Get your supplies. When you’re done with this step, click the arrow on the right.

ACTIVITY STEP 2

You need a long strip of paper. If you’re starting with a rectangular sheet, like this, fold your paper the long way, like this. Then, cut along the fold to make two pieces. The cut doesn’t have to be right on the fold. Close is good enough.

ACTIVITY STEP 3

This simple centipede has sixteen legs. It would take a long time to cut out all those legs. This about this: What trick would let you cut out many legs at the same time? Do you have any ideas? Here’s a hint: Think about what you do when you cut out a heart for Valentine's Day.

ACTIVITY STEP 4

Maybe you noticed that the left side of your centipede matches the right side. That can make cutting out a centipede a lot quicker. Fold one of your pieces of paper in half, the long way, like this. Run your finger along the fold to make a good crease. Then, unfold it. Save your second piece of paper for your second centipede.

ACTIVITY STEP 5

With your pencil draw a wiggly line down the fold you just made. This line will come in handy later. Fold the paper again with the line on the outside. Make sure you can see your line from both sides of the folded paper. If you can’t, unfold and add more wiggles, then fold it in half again.

ACTIVITY STEP 6

Now fold this long strip in half, like this. Then fold it in half again, like this. Maybe you noticed that all the centipede's legs are the same shape. All this folding is going to help you cut lots of legs all at the same time.

ACTIVITY STEP 7

Find the wiggly line you drew on the first fold you made, here’s ours. Line your finger up with that fold. Use your pencil to draw a line along the side of your finger, like this. Believe it or not, that’s going to be the body of your centipede.

ACTIVITY STEP 8

Now, you’re going to draw your centipede’s leg. With your pencil draw a big V on your folded paper, like this. Make sure the point of the V is right on the line. Line up one side of the finger with one side of the V. Draw a line on the other side of your finger. That’s one of your centipede's legs. Write leg or scribble inside of this area. Remember this is a super simple centipede so the legs don’t have to be fancy. It doesn’t matter if the scribble looks messy, they’ll be hidden on the bottom side of your centipede.

ACTIVITY STEP 9

Line up the side of a finger with the other side of the V. Draw a line on the other side of the finger. Write leg or scribble in this leg—the scribble will remind you not to cut the centipede's legs off. It doesn’t matter if the scribble looks messy, they’ll be hidden on the bottom side of your centipede.

ACTIVITY STEP 10

Before you start cutting think about this: How many legs do you think your centipede will have after you cut it out and unfold the paper? Remember, you folded the paper a few times.

ACTIVITY STEP 11

Cut around the legs on your centipede. We'll show you how—watch. Don't cut out the body and legs that you scribbled on. If it's too hard to cut through all the layers of paper, ask a grownup for help. It should look like this when you're done.

ACTIVITY STEP 12

Carefully unfold your centipede, like this. Count the legs and think about this: How did you cut out so many legs so quickly?

ACTIVITY STEP 13

Look at how colorful real centipedes can be. Think about what your centipede could look like.

ACTIVITY STEP 14

Now it's time to color your centipede. To keep your table clean while you color put a blank sheet of paper under your centipede. Add eyes, you can use the colors of a real centipede, or make up your own. You can draw stripes, dots—whatever you want. Start at the body and color outward.

ACTIVITY STEP 15

Now that you've made one centipede, use the other half of your paper to make another centipede. Here's a reminder of how to fold the paper. There are also pictures of different ways

to make the legs. These legs are harder to make, try one out if you want to. Or make the legs like you did before, they're easy!

ACTIVITY STEP 16

If you have time, here are more things to try: Make an extra-long centipede, just cut out two centipedes, and tape them end to end. Or use different kinds of paper—a receipt from the grocery store looks great with legs! What other ideas do you want to try? Grab some paper and start experimenting.

ACTIVITY STEP 17

Now that you've tried our folding trick think about why it works. Discuss. What do a Valentine heart, a paper centipede, and our crazy paper spider have in common? How are they different from each other? Here's a hint: Think about how you fold the paper to make them.

ACTIVITY STEP 18

Here's how they're the same: You can fold them down the middle and the sides match. That's why you can fold the paper and cut out both sides at the same time.

ACTIVITY STEP 19

Here's how they're different: The top half of the centipede, and the spider, matches the bottom half. That's not true of the heart. Discuss. Do you see a way to fold the centipede and the spider one more time and have all the parts match up?

ACTIVITY STEP 20

The top of the folded centipede matches the bottom, so you can fold it one more time. The spider has one last, super tricky, fold.

ACTIVITY STEP 21

When you fold a shape and the sides match, people say the shape is symmetrical. Knowing this makes it easy to cut out hearts, flowers, centipedes, or even spiders. Experiment and see what you can make by folding and cutting paper. Have fun and stay curious!