mystery science

Grades K-5
Mini-Lesson: “Who created the constellations?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! The Constellations! If you look up at the stars at night, you might know that people connect imaginary lines between the stars to imagine different animals—characters. They make different apps that can help you see these. Some of these constellations, like the stars of Orion—to me, *whoa*, they really do look like the outline of a person! Others, like this big rectangle, *wait*, how is that supposed to be a horse? Someone named Madelyn has a question about all of this. Let's give her a call now.

[Video Call]

- Hi, Doug!

- Hi, Madelyn!

- I have a question for you. Who created the constellations?

- Well, that's a great question

Maybe you've seen some of the constellations yourself, or at least, have heard of them. The Big Dipper is a popular one. These seven bright stars that are imagined to be a giant spoon or a ladle. That's what a dipper is. Officially, scientists consider this one to be Ursa Major. The big bear, including; these stars here to be the bear's legs, these stars to be the bear's head, and these three stars imagined to be the bear's tail. Whoa, that's a pretty strange-looking bear! Or, here's a group of stars you should be able to see in the summer and fall evenings, at least if you

live in the Northern Hemisphere. Before I tell you its name, what do you think it would look like if you were to draw imaginary lines between some of the stars?

VIDEO 2

Some people connect these stars this way and imagine that it's a dolphin. This is called the constellation Delphinus. The Dolphin. What do you think about that? Did you imagine a dolphin? I'm guessing maybe not. So how do people come up with this? Who decided that this a dolphin, this is a bear, and so on? To answer that question we have to go back in time. A time long before there were electric light bulbs in people's homes. A time when nighttime meant complete darkness. On warm nights people would sit outside by the fire, looking up at the night sky and using it as a way of telling stories. For example, the people of ancient Greece loved to tell the story of a person named Callisto, who had been turned into a bear by their god Zeus in order to protect her from her enemies. The story goes that that wasn't enough to protect her. So Zeus grabbed Callisto by her short stubby bear tail, and tossed her up into the sky, causing her tail to become stretched. So, you can see at least why the ancient Greeks considered these stars to be a bear, even though bears don't have long tails. It was part of their storytelling, and it's why these stars are still often called Ursa Major, which means the big bear. Still, if some of these constellations don't make a lot of sense to you, you're not alone. Because constellations are imaginary lines that we connect between stars, there's no one right way to connect them. For example, the Inuit people of Northern North America—they look up at the same stars that the ancient Greeks saw, but they connect them in different ways. When they looked at the stars of Ursa Major, they didn't imagine them as a bear, but instead, a caribou, an animal that's incredibly important to them. Or take Orion, a group of stars often connected to form the outline of a person. Now, to the ancient Greeks, who named him Orion, these three stars are his belt,

these are his shoulders, here are his feet. But to the ancient Egyptians, who lived further south of the Greeks, Orion appears higher in the sky. They imagined a person too, but instead of these being his feet, they considered these stars his shoulders. And the stars of his belt they imagined to be the bottom of his hat. Because there's no one right way to connect the stars, honestly, you can even make up your own constellations if you want to. Like, instead of connecting some of these stars to draw a person, you could connect them differently and pretend it's an ice cream cone. That said, I mentioned earlier that scientists do have certain, official ways that they like to connect the lines. That's because once telescopes were invented, scientists realized that constellations could be really helpful boundaries for the sky. Like a way of creating a map of the sky. For example, if a scientist finds a new planet, they need to be able to tell other scientists where to look to find it. If they all agree to use the same constellations, that way they can all know to look in the same places. They've divided the entire sky up into 88 constellations, and about half of those are the ones created by the ancient Greeks. So in summary, no one person created the constellations. Instead, ancient people from different places in the world had different ways of connecting the stars, based on stories they wanted to tell. If you go outside tonight, you can imagine the stars of the big dipper as a giant spoon, a caribou, or even a frying pan. It's totally up to you. That's all for this week's question. Thanks, Madelyn, for asking it!