mystery science

Grades K-5
Mini-Lesson: “Why do we need blood?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! Blood, we've all got it. Personally, it makes me a little squeamish or light-headed if I see it. Maybe you're tougher than I am. I heard though, that not every living thing has red blood. Some animals, like horseshoe crabs, and even different kinds of octopus have blue-colored blood. There's even a type of lizard that lives on some islands in the Southern Pacific Ocean—it was discovered recently that these lizards have green blood. Isn't that weird? Someone named Beckett has a question about blood. Let's give them a call now.

[Video Call]

- Hi, Doug!

- Hi, Beckett!

- I have a question for you. Why do we need blood?

- That's a great question.

You might've heard that blood flows inside of something called blood vessels in your body. These are small tubes in your body. You might even be able to see some of them from the outside. All of these blood vessels in your body connect together at the heart. One set of vessels, the arteries, carries blood away from the heart, out toward all the different parts of your body. Down to your feet, up to your head, out to your hands, to all of your muscles. Then another set of vessels, the veins, turn around and take that blood back toward the heart. In a

way, it's a lot like a race track, with blood going out one way, circling around, and coming back again. Then, starting over. But why? Why would there be all these vessels to take blood away from the heart towards all the different parts of your body, then turn around and take it all back to the heart again? What do you think blood does for our body?

VIDEO 2

Here's one clue about what blood might be doing for our body. Even though blood vessels are found all throughout your body, by studying the inside of the body, scientists discovered that there's a whole bunch of little blood vessels that connect to the small intestine. That's the tube that food moves through after going through your stomach. It turns out that as your food gets broken down into tiny microscopic nutrients, as it's traveling through your stomach and your small intestine, those nutrients get soaked up, or absorbed, into your blood vessels that connect to your small intestine. This is one super important thing that blood does for our bodies. It carries all the nutrients from the food you've eaten from your intestine away, toward all the different parts of your body that need those nutrients. Without blood, the nutrients in the food you eat wouldn't be able to reach the rest of your body, where it helps your body grow and make repairs. But even though that alone is an incredibly important job, that's not all the blood does. There's even more. One job, especially, is so important that without it, you can't even live longer than a few minutes. Here's a clue. Again, by studying the inside of the body, scientists found out that once the blood comes back to the heart through the veins, there's actually this other side racetrack that it goes on to these, right here. It does a quick stop at these, then it comes back to the heart, then goes on to the body. Do you know what these are? They're the lungs, the inner body parts that are involved in breathing. As you breathe in air, your lungs are taking oxygen out of the air. Just like all the different parts of your body need nutrients from your food, they also

need oxygen. Take your muscles in your arms for example: they need oxygen, they need air in order to be healthy and work properly. But how are they going to get oxygen if they're located inside your arm? The answer is blood! Blood carries both nutrients from your food and oxygen that it gets by stopping off at your lungs. Once the different parts of your body grab the oxygen from the blood, that blood goes back to the heart so that it can go on that side racetrack to the lungs and get more oxygen again. Oxygen is so important to all the different parts of your body that you can't live longer than just a few minutes without it. Now one quick thing about this diagram that I've been showing you this whole time. This diagram, and a lot of diagrams showing blood vessels, often show the veins as looking blue. In fact, if you're able to see any of your own veins, many people describe them as looking kind of blueish. And some people have wondered that—does blood change color? Is the blood that's carrying oxygen out to all the parts of the body, the blood in the arteries, is that blood red but the blood that's low in oxygen that's on its way towards the lungs, is that blood blue? Well, it's very easy to think that this might be true. But scientists have found out that the answer is a little more complicated. Blood does change color slightly when it's low on oxygen. It gets a little darker in color. We could say it looks a bit more purplish red. This partly explains why some people describe veins as looking more blueish in color. But it's not actually blue, it's dark purplish red. That's all for this week's question. Thanks, Beckett, for asking it!