mystery science

Grades K-5
Mini-Lesson: “How is money made?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! Here in the United States, where I live, money is always dark green, like this. But in other countries, money comes in a lot of different colors. This is one of my favorites. It's money that used to be used in the Netherlands. Look how colorful that is. Or, here's another favorite example—this one is green, but it's bright green. It's an old one from France. It's not worth anything anymore, but I like it because it has one of my favorite scientists on it. That's Marie Curie, and those are her chemistry experiments on the back.

Someone named Shamsia has a question about money. Let's give her a call now.

[Video Call]
- Hi, Doug!
- Hi, Shamsia!
- I have a question for you. How is money made?
- That's a great question.

There are lots of ways that people earn money, and we often call that "making money." But, I'm assuming Shamsia is asking how the actual money itself gets made. This stuff—cash! Now, have you ever gotten a chance to use a photocopier? A copy machine. If you have, then you

might have thought of this—if cash is just paper, then why can't you just use a photocopier, copy a bunch of money, and then, well, then you'd be rich! You could buy anything you want, right? Think of it. Run out of money? No problem. Just copy more of it. Copy a thousand dollars here—go to the toy store. Copy another thousand dollars—buy a lifetime supply of candy! That'd be awesome, right?

So, why don't most people do that? It's actually a really interesting question. Before I say anything more, take a moment to think about it. Why don't people just photocopy money so they can have unlimited money?

VIDEO 2

Well, it turns out the reason people don't make copies of money actually has a lot to do with the question of how we make money. You see, it's actually against the law for a person to make copies of money. It's called counterfeiting, and people could even go to jail for doing it. But the reason it's against the law is something that's not obvious. You have to think about it. Imagine if everyone just printed money, however much they needed. If they did that, then all of a sudden, money wouldn't really be anything special. It wouldn't be worth anything if there were an unlimited amount of it.

That's why in each country, money is usually made by the government. The people who are in charge of the laws. The government carefully controls how much money they make each year. When we're talking about money, you probably know there are two forms it can take. There are coins. In the U.S. those are things worth one dollar or less. But I'm guessing that when you think

of money, you're probably thinking more of this—cash, or what we sometimes call "paper money."

The government doesn't want money to be easy to make copies of, otherwise, it would make it worthless. So, when they do print money, they do a lot of things to make it difficult to copy. For example, even though we call it "paper money," it's not made of the same kind of paper we write on. If it were, it would be easier to copy. Also, it wouldn't last very long. In the United States, money is made from a mixture of cotton and linen, the same materials that many clothes and towels are made of. It's just much thinner than clothing or towels.

All right, let's see how it's made. Expert artists, called engravers, spent months creating detailed portraits by hand and designing each of the different bills. The design is very complicated and detailed on purpose so that it's harder to copy. Look at Alexander Hamilton on the ten-dollar bill. Even a copy machine wouldn't easily pick up some of these little details. Then, these designs are stamped onto the cotton and linen sheets using special colored ink. After that, it's cut and stacked before it gets released to banks.

Now, to make it extra difficult to make copies of, other hidden features are added, too. For example, if you've ever held up a U.S. five-dollar bill to the light, check this out. Do you see that there? That's called a watermark. This doesn't show up if you were to photocopy the money—it's very difficult to copy a watermark.

Here's another thing you can notice on U.S. money. Look closely at the blank areas. Do you see those little red and blue threads? Those are added into the cotton and linen mixture long before the designs are even stamped on with ink. So, all of these little features—the cotton and linen,

the watermark, the colored threads—all of these are designed to make money really hard to counterfeit.

In summary, cash money isn't something just anyone can print onto paper. The government carefully controls how much of it is made, and uses special design features that make it difficult to counterfeit or copy.

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