mystery science

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

VIDEO TRANSCRIPT

VIDEO 1

[Video Call]

- Hi, Doug!
- Hi, Muang!
- I have a question for you. How is plastic made?
- Ooh, that is a really good question.

These days plastic is getting mentioned a lot in the news, and not in a good way. You might have seen videos of plastic garbage floating in parts of the ocean, and maybe you've heard the fact that plastic doesn't break down very easily. So if plastic gets littered or tossed on the ground, it's often there to stay for a long time. Not only does that look ugly, it can harm wildlife that mistakes it for food or gets tangled up in it.

You might wonder, "If plastic seems to cause all these problems, what good is plastic? Why do we even use plastic at all?"

VIDEO 2

Well, there's not just a bad side to plastic. There's a whole other side of plastic that you might not know about—what I like to call the good side of plastic. And to know what's good about plastic, it's helpful to know why plastic was invented in the first place.

You see, a long time ago, more than 100 years ago, plastic wasn't even a material that things could be made out of. It hadn't been invented yet. That means, any of the things in your life today which are made out of plastic—think about it—that means everything from combs to eyeglasses to the toys you grew up with. All of these used to be made of different materials. Materials we had to go out and gather from nature. Materials like bone, wood, and antlers—even turtle shell.

One material that was especially valued was this: ivory—which comes from the tusks of elephants. People eventually realized that if they kept making things out of materials like ivory and turtle shell, there'd be no more elephants or turtles left.

Scientists and inventors stepped up to try to solve the problem. They experimented to develop a new material—one that would be just as long-lasting and useful as ivory or turtle shell, but one that could be made or created without having to go hunt animals. And they discovered it: plastic!

One of the great things about plastic was that lots of it could be easily made, using leftover parts from oil, the stuff we use to make gasoline. By combining those leftover parts with a strong substance known as acid, that's how most plastic is made. No animals have to be hunted to

make plastic. In fact, in a very real way, the invention of plastic helped to save many elephants and turtles.

But wait for a second—how can a material that was once good and helpful, not only to us but to animals, also be the same material that people are saying poses harm to animals when it's littered?

The answer to this is that plastic, like many things in life, isn't always good or always bad. It totally depends on the situation, and it's up to each of us to really think about the ways we're using it.

For example, when plastic trash is littered, the fact that it lasts a really long time actually becomes a bad thing, since now, the litter won't break down very easily, it looks ugly and can harm wildlife. But this same property—of plastic being so tough and long-lasting—is exactly what makes it an incredibly helpful material in other situations.

For example, in order for us to have telephone and internet connections between all the different places on Earth, people had to lay down giant metal cables along the bottom of the ocean, but the salt water of the ocean would damage the metal cables. A brilliant engineer named Walter Lincoln Hawkins invented an especially tough, long-lasting type of plastic that could be used to coat and protect the undersea cables. Thanks to this use of plastic, people all around the world can talk to one another on telephones and computers.

And that's just one of the thousands of different ways that people use the good side of plastic.

So in summary, plastic is created by combining leftover parts of oil with a strong substance known as acid. Plastic is a tough and long-lasting material, which could be good or bad, depending on the situation.

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