SCIENCE CAREER ADVENTURES

Samantha the Consumer Chemist: Creating Products

Meet Samantha

Hi! My name is Samantha, and I am a consumer chemist! A consumer chemist is a scientist that uses chemicals to make products for people to buy. Some consumer chemists make products that people use in their bathroom, like toothpaste! Consumer chemists also make lipsticks and dishwashing detergent to clean dirty dishes.

Products for Doctors

Right now, I am creating a new product that can be used by doctors! Did you know that doctors are also consumers? Doctors buy products to use with their patients. For example, doctors buy bandages and medicine!

The product I am making will be called "Slug Skin Glue." This product will be similar to a bandage. Just like a bandage, it will be sticky and will go on top of the skin. It will also hold together skin when it is cut. However, it will be different from a bandage because it starts out as a liquid. It will then dry into a rubbery material that covers the cut!

Did You Know?
A consumer is someone who purchases a product.

Inspiration for Product

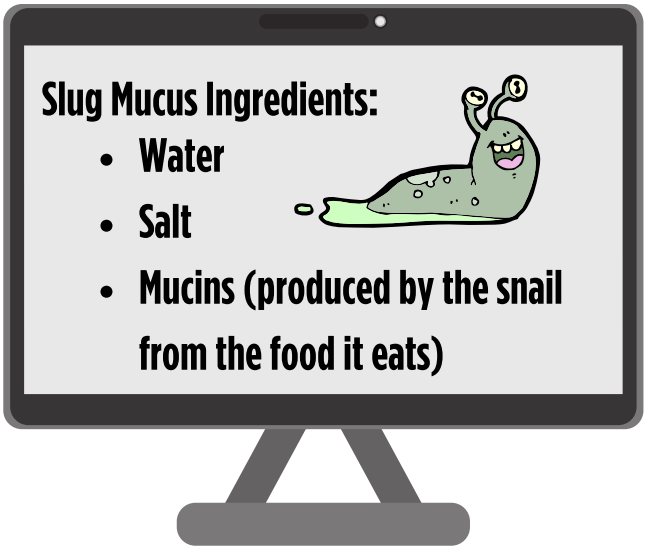
I was inspired to create Slug Skin Glue after seeing a slug in my garden. A slug is a small, slimy animal! It looks like a snail without a shell. I noticed that when another animal tries to eat the slug, it releases a thick, sticky mucus. Then, when the mucus dries, it turns into a material that is similar to rubber. The dried mucus is strong and doesn't break easily even when it is stretched.

After seeing the slug release mucus, I had an idea to create a new type of glue that can go on the skin!

Creating a New Product

To make my Slug Skin Glue, I need to learn what is in the slug mucus! That way, I can find materials to use that are similar to the mucus.

I decide to email a scientist who is an expert on slugs! She sends me a list of the things that were in the slug mucus. The slug mucus is made mostly of water and a few other types of molecules.



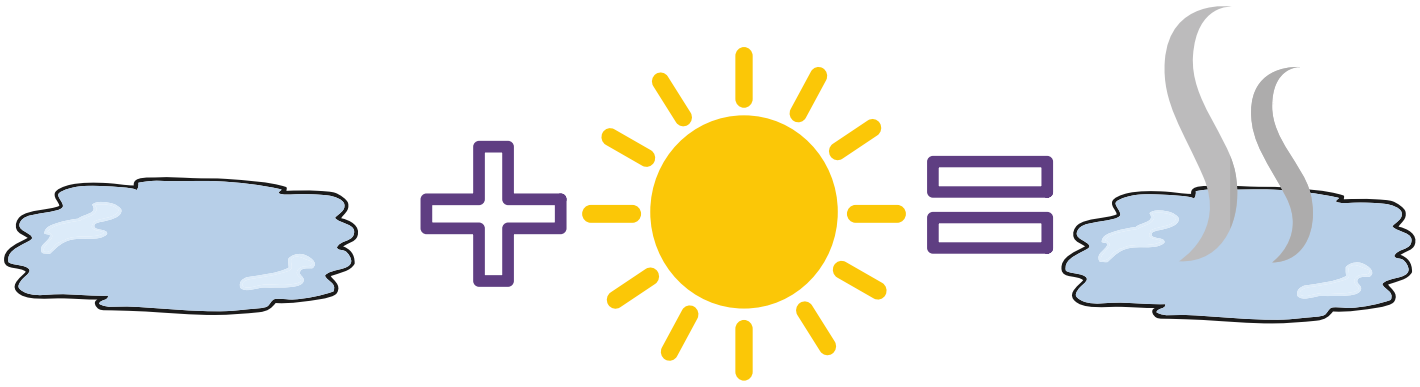
To make Slug Skin Glue, I pick out chemicals that are similar to the ones in the slug mucus. After choosing the chemicals to use, I mix them together to make my Slug Skin Glue!

Testing the New Product

Before my Slug Skin Glue is ready to be used by doctors, it needs to be tested. I need to test the glue to see if it stays together when it is exposed to hot temperatures. This is important because people's skin can be exposed to hot temperatures in the summer!

My slug skin glue has to work all the time, even when people are out in the hot sun!

To see if glue stays together when it is hot outside, I can look for signs of evaporation. When something evaporates, it turns from a liquid into a gas. If too much of the glue evaporates, it might not properly work. For example, it could fall off of the skin. The problem is that the particles that evaporate from the glue are too small to see. So, I have to weigh the glue before and after it is heated up to see if any particles evaporate.



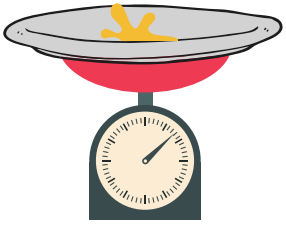
Liquid **Heat** **Evaporation**

Testing the New Product

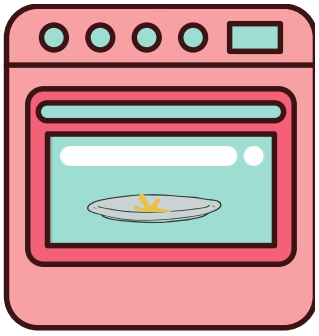
Here are the steps I took to test whether the glue evaporates in hot temperatures:

Step 1: Put a small amount of glue on a plate.

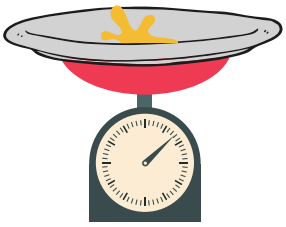
Step 2: Weigh the glue and write down the weight.



Step 3: Place the plate in an oven for 60 minutes.



Step 4: Weigh the glue again and write down the weight.



Step 5: Compare weights.

Testing the New Product

If the weights are the same, it means that the glue didn't evaporate. This is because if the weights are the same, all of the glue from the beginning is still there.

Before After

If the weights are different, it means that the glue did evaporate. This is because if evaporation did happen, some of the glue would have moved from the plate into the air. This means the weight would be less than it was in the beginning.

Before After

When all of the testing is finished, my Slug Skin Glue will be ready to use! I am so excited about this new product!