

NAME _____

LESSON

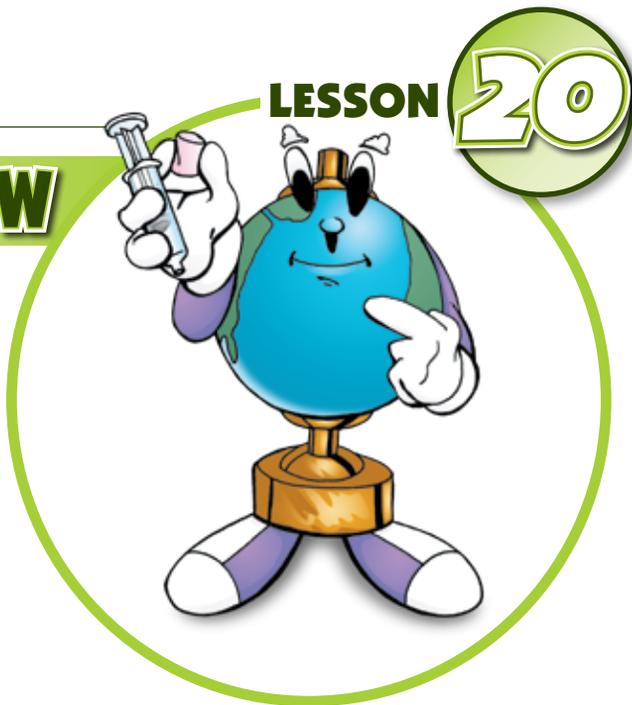
20

MAXIMUM MARSHMALLOW

FOCUS Air Pressure

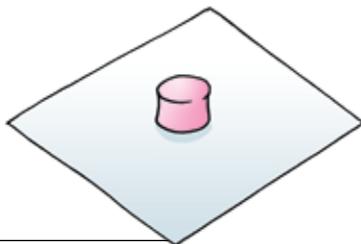
OBJECTIVE To explore changes in air pressure

OVERVIEW We've talked about the "ocean of air" that surrounds us. But how strong can changes in air pressure really be? In this activity, we'll use a marshmallow to help us find out.



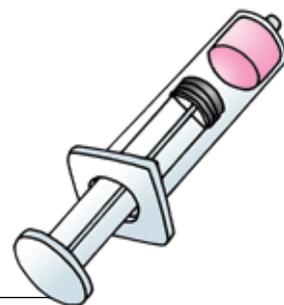
WHAT TO DO

STEP
1



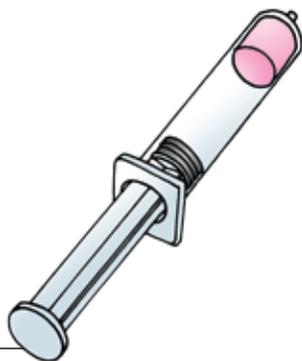
Place a marshmallow on your work surface. **Observe** it closely, looking for any evidence that this marshmallow might suddenly change size! **Make notes** in your journal about what you see.

STEP
2



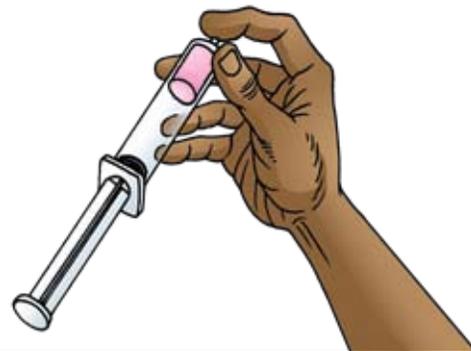
Pick up the syringe and **pull** the handle all the way out of the tube. Carefully **place** the marshmallow in the tube. **Replace** the handle and slowly **push** down until it almost touches the marshmallow. **Observe** the marshmallow. **Make notes** about what you see.

STEP
3



Continue observing the marshmallow as you **pull** the handle almost out, then slowly **push** it down again until it almost touches the marshmallow. **Repeat** two or three times. **Make notes** about what you see.

STEP
4



Plug the tip of the syringe with your finger. (The seal must be tight for this to work!) Slowly **pull** the handle back. **Observe** the marshmallow. Now **push** the handle back in. **Observe** the marshmallow. **Repeat** until everyone has had a turn. **Share** and **compare** observations with your research team.

? WHAT HAPPENED?

Air pressure is the **force** of the air constantly **pushing** all around us. Except during violent weather, we usually don't have an opportunity to see big changes in air pressure. That's because the **atmosphere** is huge, and air pressure changes normally happen very slowly.

By using the syringe, we shrank the "atmosphere" to the size of the tube. This allowed us to change air pressure very quickly. Since a marshmallow is mostly air (that's why it's so soft), it's a good indicator of big changes in air pressure. When we **pulled** the syringe handle out, there was less air pressure in the tube, so the marshmallow **expanded** (because of the air trapped inside it). When we **pushed** the handle in, air pressure increased, so the marshmallow (and the air inside it) was **compressed** into a smaller size.

? WHAT WE LEARNED

1

Compare the marshmallow in Step 2 and Step 4. How was it similar? How was it different?

2

Why was it important to push the handle close to the marshmallow in Step 2? What did this allow us to better control?



**What is the name of the “ocean of air” that surrounds us?
Why don’t we see air pressure changes in it?**



**How did the syringe help us see changes in air pressure?
How did the marshmallow help?**



**Would a peanut have worked just as well for this activity?
Why or why not?**
