

Year	Class	#
Name		

Experiment 1 Where's the Air?

Trap air in your plastic bag and write down how it feels when you press it!



☆ Trap air in your plastic bag and write down how it feels when you press it!

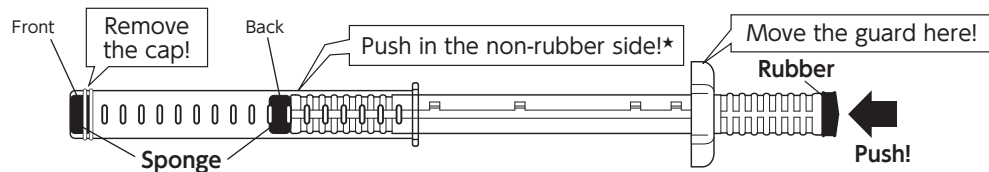
Example)

The shape of the bag changes when you press it. You can feel it push back.

Experiment 2 Trapping Air

★ You can push the rubber side of your water launcher!

Make an air launcher, then move the back sponge to see how the front sponge flies!



☆ Move the back sponge, then launch your front sponge and see how it flies!

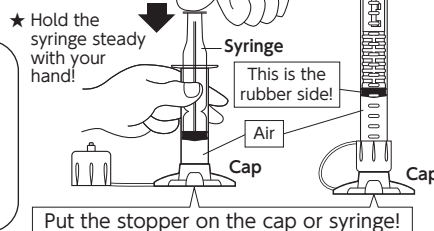
Example)

The front sponge flies further the farther you pull back the back sponge.

☆ Predict what happens to the volume of air in your tube when you push the plunger and when you let go!

Example)

The volume of air gets smaller when you push it. The volume goes back when you let go.



Experiment

Trap air in the tube and see what happens to the volume and resistance when you push and the plunger when you let go!

Strength	Weak	Normal	Strong
Plunger (draw where the plunger stops on the pictures to the right!)			
Volume	From 1 (most) to 3 (least), the change in volume was a (3)	From 1 (most) to 3 (least), the change in volume was a (2)	From 1 (most) to 3 (least), the change in volume was a (1)
Resistance	From 1 (most) to 3 (least), the resistance was a (3)	From 1 (most) to 3 (least), the resistance was a (2)	From 1 (most) to 3 (least), the resistance was a (1)
What happens when you let go?	Example) The plunger goes back up when you let go.		

★ Write the correct answer about the trapped air in the ()!

The volume of air got (smaller) when I pushed.

The volume got (smaller) and resistance got (bigger) the more I pushed.

The volume (goes back) when I let go.

☆ Can you think of any real world items which use trapped air?

Example)

Bowls, swim rings, tires, bubble wrap, etc.

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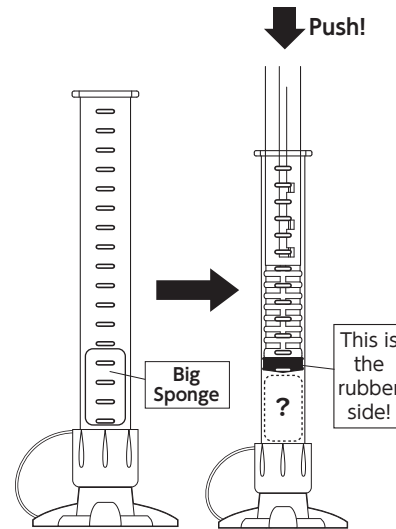
Sponge in a Tube

☆ Put your big sponge in the tube, push the plunger, and see what happens! Why does it do this?

Example)
The volume of air inside the sponge gets smaller so the sponge shrinks.

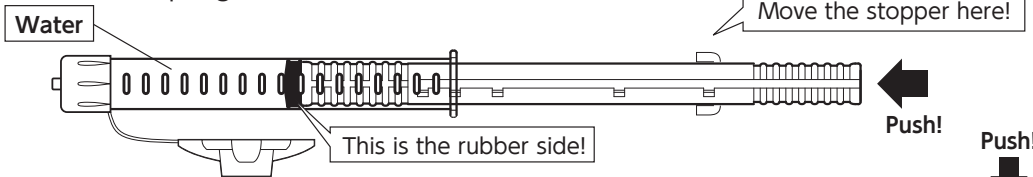
Alternative Method:

- 1 Dilute a bit of dishwashing soap in water, add it to the tube, and shake it.
- 2 Push the plunger and observe how big the foam bubbles are.



Experiment 3 Trapping Water

Make a water launcher, then change the position of the back sponge to see how the rounded sponge and water flies!

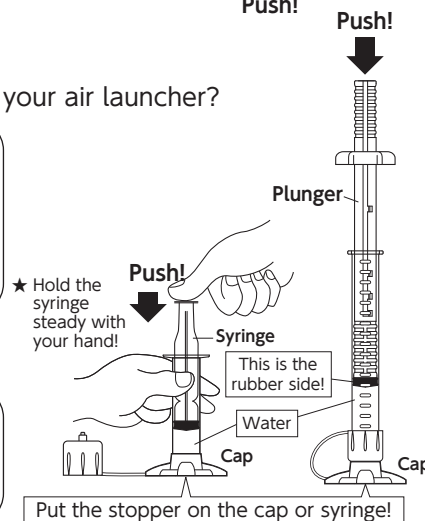


☆ How does your water launcher work compared to your air launcher?

Example)
Water shoots out immediately when you push the plunger, but you have to push the plunger longer to make air come out.

☆ Predict what happens to the volume of water in your tube or syringe when you push the plunger!

Example)
The volume of water doesn't change when you push it.



Experiment

See what happens to the volume and resistance when you trap water in a tube!

Strength	Weak	Normal	Strong
Plunger (draw where the plunger stops on the pictures to the right!)			
Volume	The volume of water <u>doesn't change</u> gets smaller)	The volume of water <u>doesn't change</u> gets smaller)	The volume of water <u>doesn't change</u> gets smaller)
What happens when you let go?	Example) Nothing happens when you let go.		

★ Write the correct answer in the () !

The volume of water (**didn't change**) when I pushed.
The resistance (**bigger**) the more I pushed.

Mixing Water and Air

Fill the tube with half water and half air and see how the volume changes!

Example)
The volume of water doesn't change much. You can only push the plunger down a little when there's air.

