



# Physical Changes and Chemical Changes

Mixing substances together sometimes causes a chemical change to take place. This type of chemical change is called a chemical reaction. In this experiment, you can observe a chemical reaction.

## What You Need

- Partner to work with
- Clean plastic water bottle (single-serving size)
- Water
- Effervescent antacid tablet
- Paper towel
- Latex balloon about 30 cm in diameter when inflated
- Clock or timer



## SAFETY ALERT

Do **not** eat any of the antacid tablet or drink the liquid in this experiment.

## Getting Ready

1. Blow up the balloon and let the air out. (Make sure the balloon does not get so big that it breaks.) Repeat two or three times.
2. Practice putting the opening of the balloon over the mouth of the water bottle. (You and your partner will need to do this fairly quickly during the experiment. Decide now who will hold the bottle steady and who will put the balloon over the mouth of the bottle.)

## What You Do

3. Pour water into the bottle until the bottle is half full.
4. Over a paper towel, break the antacid tablet into several pieces. Drop the pieces into the bottle. (Be ready for the next step!)
5. Quickly put the balloon over the mouth of the bottle. Notice how the balloon looks.
6. Wait for one minute and watch what happens. (If the balloon gets big enough to break, do the next step right away.)
7. Pinch the neck of the balloon and carefully pull it off the bottle. Slowly let the air out of the balloon.
8. Pour the liquid down the drain and throw out the balloon.



## **“Experiment: Observing a Chemical Change”—Think About It!**

1. Draw a picture that shows how the balloon looked when you first put it over the mouth of the bottle. Then draw what the balloon looked like after one minute.

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2. Most gases are invisible. In this experiment, what are two signs that a gas is produced from a chemical change?

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3. When the balloon expands, is it going through a chemical change or a physical change? Why do you think so?

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### **What is happening in this experiment?**

The antacid tablet contains chemicals that react with each other, causing a chemical change. These chemicals do not react with each other when they are dry (as in the tablet), but they do react with each other when they are dissolved in water. A new substance—carbon dioxide gas—forms from the chemical change that takes place.