

STEM ACTIVITY

The Good Samaritan

Total Time: 15 minutes
In Class Time: 10 minutes

You will need:

- Hydrogen peroxide
- Dish soap
- Yeast (powder)
- Small drinking glass (juice cup)
- Stirring stick
- Washcloth (for cleanup)



STEP 1: TEACH: Joy was not sure, at first, about sharing her pizza with the other kids. She needed some encouragement from Superbook. The story of the good Samaritan was the catalyst that got her generosity going. In chemistry, a catalyst is something that starts or speeds up a process. We're going to use yeast as our catalyst to make hydrogen peroxide break down into oxygen and water.

STEP 2: Pour about 2 ounces (50 mL) of hydrogen peroxide into the glass.

STEP 3: Add a teaspoon (5 mL) of liquid dish soap and stir.

STEP 4: Add a half teaspoon (~2 g) of powdered yeast, and stir. The mixture will bubble as the hydrogen peroxide decomposes into water and oxygen. **CAUTION:** The mixture will heat up as a result of the reaction.

EXPLAINING THE SCIENCE:

Catalase is an enzyme that speeds up (catalyzes) the decomposition (breakdown) of hydrogen peroxide (H_2O_2) into water (H_2O) and oxygen (O_2). It is found in almost all kinds of plants and animals. Yeast, a fungus, contains lots of catalase, so when it comes in contact with hydrogen peroxide, it causes its rapid decomposition and gives off heat as it does so. The dish soap captures the bubbles formed and keeps them intact, forming a foam.