

# Exploding Baggie

**What is the Challenge?** Make a baggie explode with a chemical reaction!

**What you need:**

- Quart sized zipper -style sandwich bag
- $\frac{1}{4}$  cup warm water
- $\frac{1}{2}$  cup vinegar
- 3 teaspoons of baking soda
- Tissue

**What to do:**

- Find a space outside that can get messy.
- Measure 3 teaspoons baking soda onto a tissue. Fold the tissue into a small square. Set aside.
- Pour  $\frac{1}{4}$  cup warm water into a baggie.
- Pour  $\frac{1}{2}$  cup vinegar into the same baggie.
- Close the baggie most of the way, leaving just enough space to fit the tissue into.
- Drop the tissue into the baggie, and seal the baggie.
- Step back and watch.

**Notes for Adults:**

- Older learners can measure their own ingredients, premeasure the ingredients for younger learners.
- This can get messy. Do this project outside where plants and animals will not be harmed.



**EXPLORATION  
PLACE**

THE SEDGWICK COUNTY SCIENCE AND DISCOVERY CENTER

### STEM Connection:

- Baking soda and vinegar create a chemical reaction when mixed. This chemical reaction produces carbon dioxide ( $\text{CO}_2$ ) gas. Since the baggie is sealed, there is nowhere for the gas to go. Pressure will build and build until the baggie stretches and eventually pops!

### Take it further:

- Try changing the chemical reaction and observe the difference.
  - Try adding more or less vinegar.
  - Try cold versus hot water.
  - Try adding more or less baking soda.
  - Try a different sized baggie.

