



Properties of Elements Activity for Kids

Splitting Water Molecules DIY

 Duration: **20–30 min**  Difficulty: **Medium**  Cost: **\$0 to \$10**

Learn how to split water molecules into the elements of hydrogen and oxygen!

Material List

- 2** Pencils
- 1** Pencil Sharpener
- 1** 9-Volt Battery
- 2** Wires with Alligator Clips
- 1** Glass of water
- 1** Pinch of Salt
- 1** Pair of Safety Glasses

Adult supervision

Instructions

- 1** Pour half a teaspoon of salt into a glass of water and mix it.
- 2** Remove the eraser (including the metal part) from two pencils (use pliers to help).
- 3** Sharpen both ends of each pencil to make double-ended pencils.
- 4** Attach alligator clips to each terminal of the battery and then to each pencil tip (black part).
- 5** Place the other ends of the pencils into the water (you should see gas bubbles start to be made).

How It Works

The gas bubbles forming around the pencils in the water are caused by electricity being used to split water molecules into the elements, hydrogen and oxygen. Hydrogen gas forms on one of the pencils, and oxygen gas forms on the other. The pencil that is making a lot more bubbles than the other is the hydrogen gas. This is because water has 2 hydrogen atoms for every 1 oxygen atom (H_2O).