

# Halloween Laboratory Activity – Student Edition

## Jack-O'-Lantern Pumpkin Slime Volcano

### Background Information:

Pumpkins with ghoulish faces and illuminated by candles are a sure sign of the Halloween season. The practice of decorating jack-o'-lantern originated in Ireland, where large turnips and potatoes served as early canvasses. In fact, the name jack-o'-lantern, comes from an Irish folktale about a man named Stingy Jack. Irish immigrants brought the tradition to America, home of the pumpkin, and it became an integral part of Halloween festivities.



Anything pumpkin is always fun, whether you eat it, carve it, or turn it into hands-on pumpkin experiment! In this laboratory activity, you will make slime that will be one of the main components of your pumpkin volcano. Also, you will demonstrate a volcanic eruption with the use of your pumpkin and common household materials and identify the chemical reaction involved in it.

### Learning Objectives:

At the end of this laboratory activity, students are expected to:

- identify the state of slime ingredients and the changes in the state of matter while making the slime
- identify the chemical reaction involved in the mixing of vinegar and baking powder

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## Pre-lab Questions:

1. What are the three states of matter? Describe each.

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2. Differentiate physical and chemical changes in matter.

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3. What kind of change happens when a material changes its state? Why?

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4. When do you know that a chemical reaction takes place?

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## Materials:

- Pumpkins (one per group)
- Pumpkin carving knife or kit (one per group)
- Baking soda
- White vinegar
- Elmer’s washable white school glue
- Saline solution
- Green, red, and yellow food coloring
- 2 mixing bowls
- plastic spoon

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## Procedure:

### Part 1: Carving the Pumpkin

1. Clean out the insides of the pumpkin.



2. Using a knife or carving kit, carve a face into it and make it a jack-o'-lantern.

**Safety Alert!** Knives are sharp! Be careful in handling it and do not play with it. Using utility gloves are highly recommended for this activity.



### Part 2: Making the Slime

1. In a bowl, mix thoroughly 4 tbsp of baking soda for every 1 cup of white glue. Observe its thickness and consistency.



2. If you think it is not yet “slimy”, add small amounts of baking soda to the glue and mix slowly until it reaches a good thickness for the slime.
3. Add food coloring to your slime. You can choose whichever color you like or you can even mix different colors.



Name: \_\_\_\_\_

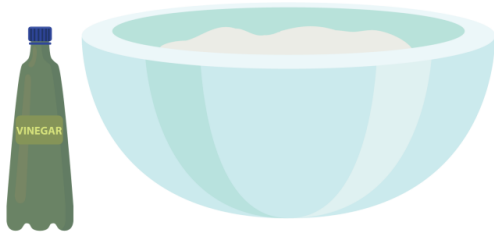
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## Part 3: Doing the Pumpkin Volcano

1. In another bowl, mix 2 tbsp of vinegar with  $\frac{1}{2}$  cup of saline solution.



2. Pour the slime and baking soda mixture into the pumpkin. Lean the pumpkin back away from the face so it does not spill.
3. Then, pour the vinegar and saline mixture into the pumpkin.



4. Now stir them together until the pumpkin erupts and it gets so thick that you can hardly stir it.
5. There you have it, an oozing volcanic jack-o'-lantern. Let them dry out and they make a cool Halloween decorations for a few days!



Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

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## Post-lab Questions:

1. What was the state of matter of slime ingredients? What change in state took place to these ingredients when you were making the slime?

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2. What happened to the vinegar and baking soda (in slime) when mixed together?

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3. What evidence of chemical reaction were present in the mixing of vinegar and baking soda (in slime)?

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4. What kind of chemical reaction took place between vinegar and baking soda?

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5. **EXTRA CREDIT:** Write the chemical equation for the reaction of vinegar and baking soda.

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