

Bath Bombs

Summary

In this activity, we will be learning about chemical reactions by creating our very own bath bomb. When we place a bath bomb in water one of the key observations we can make is the sudden fizzing that occurs, but do you know what ingredients we used are causing this fizzing reaction?

Materials

- 1/2 cup Baking Soda
- 1/4 cup Citric Acid
- 2 TLBSP Epsom Salt
- 1/4 cup Corn Starch
- 1 & 1/4 TLBSP Baby Oil or water
- 1/4 TLBSP Water
- Up to 1 tsp Fragrances Oil
- Measuring cups & spoons
- Mixing bowl
- Mixing spoon
- Small cup
- Molds
 - *A muffin tin is a great, but you will want an oven safe option.*

Steps to Follow *(All activities must be done with adult supervision)*

1. *Let us review: what is a chemical reaction and a mixture?*
 - a. *A chemical reaction occurs when two or more chemicals, compounds, or substances are converted into a new product different from what you started with.*
 - b. *A mixture occurs when two or more substances physically mix together, but no chemical reaction occurs.*
2. In a mixing bowl, add the following dry ingredients: baking soda, Epsom salt, citric acid, and cornstarch.
3. In a separate small cup, you will add in your wet ingredients: baby oil, water, and fragrance oil.
4. Having your mixing spoon ready for this step. Pour you cup of wet ingredients into your large mixing bowl of dry ingredients begin rapidly stirring everything together.
5. Continue mixing until you have a soft damp dough consistency.
 - a. *Why do you think we kept our ingredients separate?*
 - i. *This was done to reduce chance of baking soda (a base) and citric acid (an acid) going through a chemical reaction.*
 - ii. *As solids they could still react, but it would take a lot of time and energy compared to one or both dissolving in water which would allow the reaction to occur more easily.*

6. Add your dough into your chosen mold. Let it sit out overnight or place in an oven set to ~170°F for ~45mins.
7. Observe the results of your bath bomb by placing it in some warm water.
 - a. *Why does the bath bomb fizz?*
 - i. *Baking soda and citric acid go through a chemical reaction when placed in water which allows them to mix more easily. The result of this interaction is a product called Carbon Dioxide, a gas that is causing all those bubbles.*
 - ii. *Checkout our videos on Balloon Blow Up, Baggie Science, and Volcanoes for more about chemical reactions!*
 - b. *Can we turn this into an experiment?*
 - i. *Try changing up the amount of your acid and base ingredients to observe the effects of this change.*

Next Generation Science Standards (NGSS): 5-PS1-4