MY OWN SNOW STORM

STEM STARS
Free Winter Activity Series

Property of

My Own Snow Storm

Do you need some short STEM activities for your students to fill in between PBL's? Are you just starting out in your STEM journey? Do you need to create excitement about Science in your class? These STEM activities will work for any of those situations!

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Who doesn't love a snow storm where you don't get cold or even have to shovel? Have your students create their own snow storm which will open up a discussion about the density of water and oil!

Getting Started

Ask: Ask your students if they have ever gotten oil on their hands and tried to wash them with just water and the oil didn't come off? Ask them if they have ever seen a picture of an oil tanker spill and the oil just floats on top of the water.

If you think your students do not have any background knowledge of oil and water, place a drop of baby oil on their hands and tell them to rub their hands together. They are then to go to the sink to "wash" it off with just water. Ask them what they notice. Then have students go to the sink and wash off the baby oil with soap and water. Ask what they notice now.

Materials:

- Mason Jar for each group of students *(not too large)*
- Baby Oil
- White Paint
- Alka Seltzer *(each jar needs one tab)*
- Silver or white glitter
- Warm Water

Procedure

1.) Mix the white paint and warm water together to make the "snow". The amount you need will vary on the size of your jar *(will fill approx ¼ of your jar)*.
2.) Fill each jar with a little less than ¾ of baby oil.
3.) Have the students pour the white water into the jar to almost the top and then sprinkle in some glitter.
4.) Have the students watch the water fall to to the bottom of the jar.
5.) Break an Alka Seltzer tab into 4 pieces.
6.) Have the students drop the pieces into the jar.
7.) Watch the expressions on your student's faces when the snow storm starts.
8.) You can repeat this experiment by just adding more Alka Seltzer.

Background Info

Everything around us is made up of molecules. They way in that two materials interact depends on the molecules that make up the material. The molecules of water are packed very closely together. In a 8oz glass of water there are more water molecules than there are stars in the Universe! Because they are very dense they sink underneath the water if not shaken up.

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Another reason is that water molecules are more attracted to other water molecules than oil molecules. The same goes for oil molecules, they are attracted to other oil molecules more than water molecules. That's why they separate when put together in a jar.

Soap or detergent is attracted to both oil and water, that is why they all mix together to form an emulsion which easily washes away!

The ingredients of Alka-Seltzer are citric acid and sodium bicarbonate (baking soda). When you drop the tablet in water, the acid and the baking soda react -- this produces the fizz. You can think of an Alka-Seltzer tablet as compressed baking powder with a little aspirin mixed in.

Conclusion

While this is a fun activity to do with younger students (especially students who live in warmer climates) it also allows a very basic chemistry discussion at the same time. Ask your students what they wonder about the activity. You can make a class chart of "their wonderings". Then using the background information help clarify some of their questions. Maybe even come up more questions that the class needs to research! Children are naturally curious, and it is our job as educators to keep that curiosity going so that they become the scientists of the future!

Thank-You!

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