August 2 - Bubbles

As a kid I loved playing with bubbles and I am sure that there are lots of kids out there who love to play with bubbles. This week not only do I have a great bubble recipe for you, I have another way to play with bubbles, and be an artist at the same time.

***Always remember to ask an adult before doing any Science experiment.**

Materials

Dish Soap (Blue Ultra Dawn works the best)
Glycerine
Water
Container
Measuring cup
Bubble wands

Optional materials

3 or 4 colors of Tempera paint
Light colour construction paper
Small bowls – one for each color of paint
Teaspoon
Friend

Procedure

1. Measure a quarter cup of glycerine and pour into your container
2. Measure one and a half cups of soap and pour into the container with the glycerine.
3. Measure 6 cups of water, gently pour into the container.
4. Stir the mixture up with your hands, gently you don't want to make a bunch of suds in the bucket, this makes the bubbles break.
5. Use your bubble makers to blow some bubbles!

Procedure for optional materials

1. Take about 1 cup of the bubble solution and put it into a small bowl
2. Add about a teaspoon of paint to the bubble mixture
3. Repeat steps one and two for each paint color you have
4. Blow bubble with the new bubble mixture and have your friend catch the bubbles on the paper and let them pop, see what kinds of pictures you can make with your bubbles.
5. For darker colors in the bubbles add more paint.

Explanation:

The mixture will be thick, thanks to the glycerine and lots of dish soap, but it works very well for outside bubble blowing. It is a bit thicker so it will withstand the wind and outside pressures that may pop a more fragile bubble. It is also cheaper and better than buying the prepared bubble solution in the store. You may need to adjust your soap and glycerine measurements depending on the weather outside. I find I need to make fine adjustments to them from day to day depending on the humidity.

Science Smarts Column –August 2008

Have a great week playing with bubbles!

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August 9 – Rainbows

All the colors in rainbows always look so pretty to me, I have always enjoyed looking at them, and sometimes there isn't a rainbow around when you want one, I now have a solution to that problem, so I can't wait to share this experiment with everyone, I had to make sure that it worked properly first, but now that I know it works, here it is, permanent rainbows.

***Always remember to ask an adult before doing any Science experiment.**

Materials:

Black construction paper (or another dark color)
Water
Pan (I used a 9x9 baking dish)
Clear Nail polish
Newspaper

Procedure:

1. Cut your construction paper so that it will lay flat in the bottom of your pan
2. Put the construction paper in the bottom of the pan
3. Put your pan on a counter and put some newspaper beside it (make sure you have the newspaper right there or you may die your hands with the black ink from the construction paper like I did)
4. Pour water into the pan so that it covers the paper, you want the water to be about a centimetre deep. And push the paper to the bottom of the pan if it has floated up
5. Carefully drop a drop of nail polish onto the water; you can do this just by lifting the brush out of the bottle and holding it over the water. If you get more than one drop it is okay, you will just have a different pattern.
6. Watch as the nail polish spreads out on the water
7. Let the polish dry for a few minutes, you can see the edges start to crinkle when it is dry.
8. carefully grab the corner of the paper and lift it out of the water, catching the edge of the nail polish on it, you may need to grab two corners of the paper to do this so that the polish doesn't slide right off the paper and back into the water.
9. Carefully let the water run off the paper for a minute then lay the paper with your rainbow in it onto the newspaper to dry.
10. Make sure you wash out your pan so that there is no nail polish left on it.

11. To see your rainbow once it has dried hold it flat by a light source and look at it from different angles.

Explanation:

When you drop the nail polish onto the water it expands into thin film that is only one wavelength of light thick. You then catch this on the paper and have a rainbow. The rainbow works because the film of nail polish we created is thinner on the outside and a little bit thicker in the middle. The thickness of the film creates the different colors of the rainbow that we see, the thicker film bounces the light back slower than the thinner film. If you look very closely at your film you will notice that the thinnest edge is colorless, this is because it is so thin it is thinner than a wavelength of light, so you can't see color in it. And if the film is too thick, you won't see any individual colors because they are all combined, so we see white light.
Have fun playing with rainbows this week

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August 16 – Biomes

This week I have been at the college helping out with the Blast Off Camp. One of the activities that we did was making a self-contained environment, a biome. I thought that it was a neat activity so I thought that I would share it with all of you..

***Always remember to ask an adult before doing any Science experiment.**

Materials

Pop Bottle – a 2L one works the best
Dirt
Plant seeds
Rocks
Water
Large Ziploc Baggie
Scissors

Procedure

1. Cut the pop bottle in half, so that you have the bottom of the bottle left, you can throw the top (the spout) in the recycling.
2. Put some rocks in the bottom of the bottle, you need them to be about an inch deep
3. Put dirt in the bottle to the top and push it down a little bit.
4. Plant 4 – 6 seeds in the dirt. If you germinate the seeds the night before (soak them in some water) they will grow faster.

5. Add water to the dirt slowly. Continue adding water until it soaks into the soil and you can see it up to the dirt at the bottom.
6. Put your planter in the baggie and zip it up.
7. Place in a sunny area and check on it daily.
8. You know have a self contained environment, as long as the baggie is closed you shouldn't have to water your plant

Explanation

You've now created your own environment for your plant to grow in. You don't need to water your plant again, because the water will recycle itself through your environments own mini water cycle. The roots of the plant absorb the water and the water then travels up the stem to the different parts of the plant. Some of the water evaporates out of the plant through the leaves (as we saw a few weeks ago in one of our other experiments), some water also evaporates from the soil. If you look closely you should be able to see some of the evaporated water as it collects on the bag through condensation. The condensation then falls back into the soil, like the rain does on Earth, this is called precipitation. Your water cycle then continues on, absorption, evaporation, condensation, and precipitation. You don't need to feed you plant because it makes its own food from the sun in a process called photosynthesis.
To expand this experiment make a few biomes and change something about each one, maybe put more or less water in, keep them in areas that are really sunny or not very sunny.

Have a great week!

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August 23 – Volcanoes

This week was the last week of camps at the college and I have had such a fun time checking in on them and seeing what some of the activities the kids have been doing are. This week I want to share one of the activities from the ScienTWISTS camp. The kids seemed to be having a blast making and erupting their volcanoes that I wanted to share it with you, and there are a few more ingredients than the volcanoes that I have seen in the past. You will want to do this outside or somewhere where it is okay to make a little bit of a mess, so make sure to check with an adult as to where you can do this.

***Always remember to ask an adult before doing any Science experiment.**

Materials:

Volcano:
Empty bottle – 500ml water ones work great
Newspaper

Tape
Tinfoil
Plastic bag
Spray paint (optional)

Eruption materials:

Empty Bottle – other than the one you used in your volcano, you need the lid for this one
Water
Baking soda
Dish soap
Red food coloring
Vinegar
Funnel

Procedure:

1. Place your bottle on the plastic bag, this will help with clean up
2. Roll your newspaper into balls and place around your bottle; you can use tape to hold them in place. Build the balls up around the bottle making a mountain shape
3. Cover your mountain with the tin foil, making sure to leave the top of the bottle open so that you can add your materials for your eruption.
4. Spray paint your volcano to decorate it if you want
5. In your second bottle add about a cup of water – so fill the bottle up about half way. To that add 4 or 5 tablespoons of baking soda. Put the lid on and shake it up
6. To your mixed up water and baking soda add about 6 drops of food coloring and 6 drops of dish soap, put the lid on the bottle again and gently shake it up.
7. Place your funnel in the mouth of the volcano bottle and pour your water mixture in
8. Take your funnel out, and carefully pour in some vinegar until your eruption happens, you will probably need about half a cup.

Explanation:

As many people know vinegar and baking soda react quickly with each other to produce carbon dioxide, I did an experiment back in January dealing with this. So we know what will happen when we add that to it, but why do we add the dish soap? The dish soap is what causes the foam, when the vinegar and baking soda react so fast they stir up the dish soap in the water and make the foam that we can then play with after our eruption.

Have a great last week of summer holidays.

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