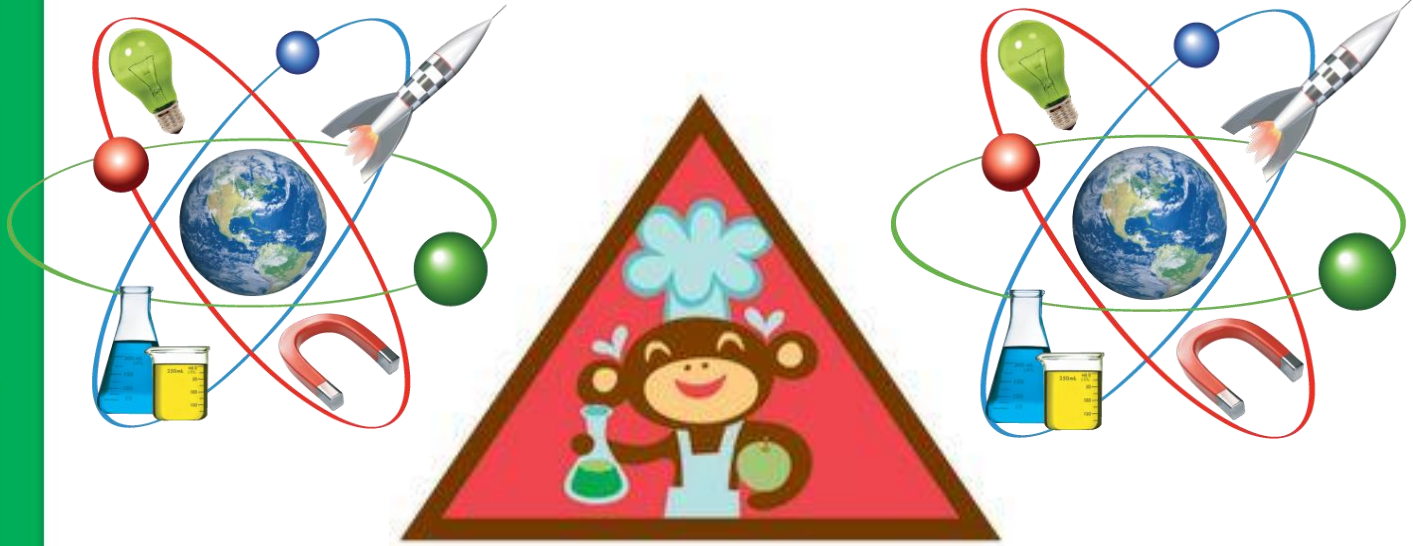
girl scouts of western new york

HOME SCIENTIST

TIME TO EXPERIMENT AND EARN OUR HOME SCIENTIST BADGE



WHEN OBJECTS GET AN ELECTRICAL CHARGE IT'S CALLED

STATIC ELECTRICITY

WHEN OBJECTS RUB TOGETHER, THE RUBBING CAUSES ELECTRONS TO MOVE FROM ONE OBJECT TO ANOTHER.

Click on the link to watch the video:

https://www.youtube.com/watch?v=oU8Fe6846d4

STATIC ELECTRICITY ELECTRONS

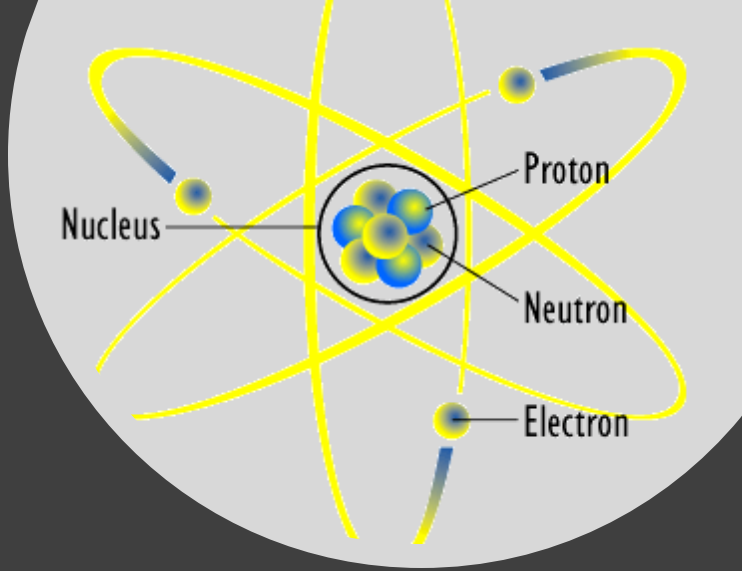
ELECTRIC CHARGE:

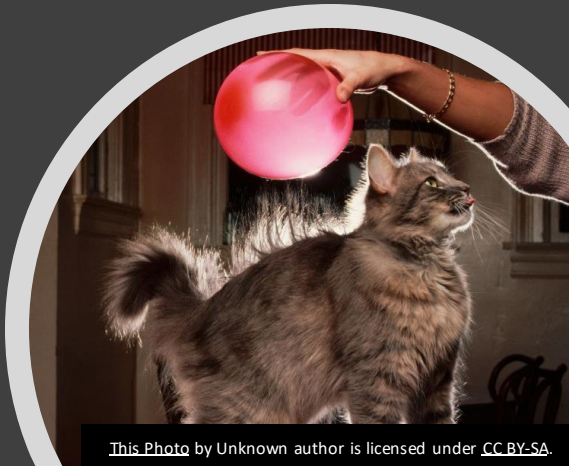
- NEGATIVE CHARGES- GAIN ELECTRONS

(Rubbing the balloon on clothing creates friction and putting it close to your hair)

- POSITIVE CHARGES- LOSE ELECTRONS

(The positive charge attracts the negative charge, they meet, and your hair rises!!





SALT AND PEPPER DANCE

STATIC ELECTRICITY ACTIVITY

WHAT YOU WILL NEED: PAPER PLATE, 1 TEASPOON OF SALT & PEPPER AND A BALLOON

BLOW UP YOUR BALLOON AND TIE THE END. THEN POUR 1 TSP OF SALT & PEPPER ON THE PAPER PLATE. RUB YOUR BALLOON ON YOUR SHIRT OR PANTS. THEN PLACE IT OVER YOUR PLATE.

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HOME SCIENTIST BADGE

IN OUR NEXT SET OF BADGE ACTIVITIES, WE WILL GET CREATIVE IN THE KITCHEN. PLEASE GET YOUR PARENTS' HELP!

1. SNACK AND DIVE DENSITY

2. KITCHEN CHEMISTRY

Why do some things float?

Fun Facts:

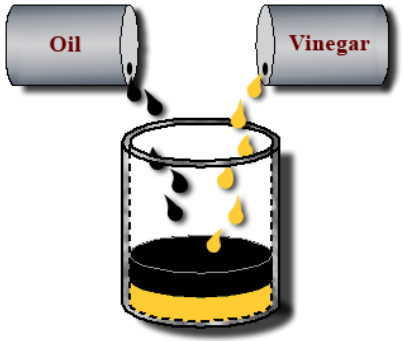
- Air inflates floaties to help them float on top of water
- Hot temperatures from fire and gas helps Hot Air Balloons float in the sky. The hotter it gets the higher you go!

DIVE INTO DENSITY

KITCHEN CHEMISTRY

Vinaigrette Salad Dressing

You will need: 1tsp. **Mustard**, 1tbs. **Vinegar**, ½ cup **Oil**, Clear Cup, **Salt** & **Pepper**



If you add vinegar and oil together, they will not mix. Even though they are liquids. But mustard is an emulsifier and added to the mix it will bring the 2 together!

1. Add 1tsp. Mustard and 1tbs. Vinegar
2. Stir, Stir, Stir, then slowly add oil and continue to stir

STOP!!! **WHAT DO YOU SEE**?

Are there tiny bubbles floating in the vinegar with a hold of mustard?

THIS IS CALLED "EMULSION"

3. Now you can add Salt, Pepper, Herbs, and Spices of your choice! Enjoy!!!

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SNACK & DIVE INTO DENSITY

You will need: Raisins, a can of Sprite or 7UP, and clear cup or empty water bottle

1. Pour your beverage of choice into a clear cup or water bottle
2. Drop 6-7 Raisins into the cup.

WATCH AS THE RAISINS DROP TO THE BOTTOM. THEN BUBBLES HELP THEM FLOAT GRADUALLY TO THE TOP!!!

CONGRATULATIONS!

YOU HAVE COMPLETED PART 1 OF HOME SCIENTIST

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GIRL SCOUTS OF WESTERN NY

HOME SCIENTIST 2

STEM

*DRAW A SCIENTIST
*MAKE SOMETHING BUBBLE UP
*HOMEMADE SILLY PUTTY

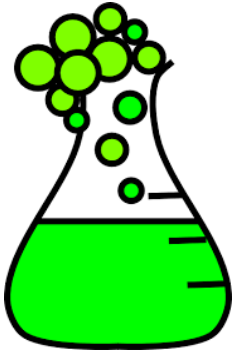
Home Scientist 2

Draw a Scientist!

Draw a picture of a scientist doing something that helps people!

Home Scientist 2

Making Something Bubble up!



Materials (for groups of two)

- 1 teaspoon, 1 tablespoon
- 2 tablespoons vinegar
- 1 clean, empty 20 oz. soda bottle
- 1 balloon (but have extra balloons on hand)
- 1 teaspoon baking soda

Home Scientist 2

Making Something Bubble up!

1 Girl Scout holds the balloon and 1 will do the pouring

1st ADD 2 tablespoons of Vinegar to empty bottle

2nd One girl will hold the mouth of the balloon open while the other will pour 1 teaspoon of baking soda into the mouth of the balloon

Home Scientist 2

Making Something Bubble up!

Next, stretch the balloon's opening over the mouth of the bottle. Make sure the baking soda inside the balloon falls into the vinegar.

- What kind of chemical reaction is happening?

- Gases like carbon dioxide will try to find places to go when they are expanding in a closed-up space. Is that what's happening here?

Home Scientist 2

Making Something Bubble up!

The baking soda and vinegar create carbon dioxide when they mix. There is not enough room inside the bottle for extra gas, so it expands into the balloon, blowing it up!

- Did you get the balloon onto the soda bottle fast enough to see it inflate?

- Did your baking soda mix with the vinegar?

Home Scientist 2

Homemade Silly Putty!

Materials (for each girl)

- Food coloring
- ¾cup glue
- ¼cup liquid starch or borax
- Mixing bowls (plastic or paper bowls)
- Water
- Plastic baggie

Home Scientist 2

Homemade Silly Putty!

- Silly Putty is fun goo that you can stretch, stamp, and play with!

Step 1- In one bowl, mix 8 drops of food coloring, the glue, and 1 cup water.

Step 2- In another bowl, mix the borax or starch with 1 1/3 cups water.

Step 3- Slowly add the liquid borax or starch mixture to the colored glue and water mixture.

Step 4- Once you've done that, get your hands into your mixture and knead it until you can stretch it but make sure it isn't mushy.

Home Scientist 2

Homemade Silly Putty!

- Does your Silly Putty stretch?

- Is it runny?

- Can you use it to pick things up?

** When you're done playing with it, store your mixture in a plastic baggie. If it's out in the air for more than two hours, it will harden!**

CONGRATULATIONS!

YOU HAVE COMPLETED THE HOME SCIENTIST BADGE!

If you'd like to share your photos or feedback from working on this badge, you can send an email to girl.experience@gswny.org

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