Just for Fun

Walworth County 4-H Cloverpatch Activity

Simple Science

November, 2020

Discover the scientist in you.

This month's issue features two Wisconsin 4-H S.T.E.M. experiments you can do at home using a handful of common household supplies! Complete your favorite experiment. Watch the videos provided if you need to. Answer the "Think Like a Scientist" questions that correspond to your chosen experiment. Then, be sure to take a selfie of your work, so we can see your efforts. Email your picture to walco4h.com OR upload it to social media with the **#WalCo4HFamilyChallenge** hashtag!

Make a Bee Buzzer

Explore sound.

Supplies needed:

Craft Stick
2 cap erasers
Scissors
3" X 5" Index Card
¼ Wide Rubber Band
Stapler
2 feet of string

Instructions:

Put one cap eraser on each end of the craft stick.
Trim the index card so it fits between the erasers.
Staple the card to the stick.
Tie the string to the stick next to one of the erasers; use several knots to secure the string.
Stretch the rubber band around the craft stick from one eraser to the other.
Move to an open area, and swing the string around.
What happens? How does it work?

Need help?

Watch this video:
https://www.youtube.com/watch?v=iGEqOM66O0A.

THINK LIKE A SCIENTIST!	
Observe	What do you see, feel, hear, or smell?
Think	What is the purpose of the rubber band?
Think	What is the purpose of the index card?
Apply & Investigate	What happens if you use a different size or type of rubber band?
Apply & Investigate	What happens if you fold or cut the index card?
Apply & Investigate	What happens if you use a different thickness or type of string?
Apply & Investigate	What other musical instruments use vibrations to make a sound?

What's happening?

When you spin the hummer (buzzer), moving air causes the rubber band to vibrate. Sound is produced by those vibrations, in the same way that vibrating strings on a guitar or violin produce sound. The sound is amplified--made louder--by the index card.

Reference:

Adapted from a lesson by Patrick Willis, Oregon State Extension, http://extension.oregonstate.edu/hoodriver/sites/default/files/4h/stem_activity_-_engineer_-_bee_buzzer_lesson.pdf.

Build a Balloon Inflator

Create a reaction.

Supplies needed:

Vinegar	Baking Soda	Dry Measuring Cups or Spoons
Soda Bottle	Balloon	Liquid Measuring Cup

Instructions:

Put a good sized scoop of baking soda in a balloon. Note how much you used.
Pour ¼ cup vinegar in the soda bottle.
Put the balloon on the soda bottle, holding it tightly so that none of the reaction escapes, while the baking soda drops into the soda bottle.
What happens?

Need help?

Watch this video: https://www.youtube.com/watch?time_continue=19&v=31mNUfMgkwQ.

What's happening?

The acid in the acetic acid (vinegar) reacts with the sodium bicarbonate (baking soda), forming carbon dioxide (CO_2) and water (H_2O). This is a reaction of an acid with a base. The CO_2 gas takes up a lot of space, so it inflates the balloon.

Reference:

Adapted by Debbie Harris and Anna DeMers from a lesson by Marilyn Duerst, University of Wisconsin River Falls, Marilyn.d.duerst@uwrf.edu.

THINK LIKE A SCIENTIST!	
Observe	What do you see, feel, hear, or smell?
Think	What is the purpose of the baking soda?
Think	What is the purpose of the vinegar?
Think	How do you know that CO_2 is formed?
Think	How much vinegar and baking soda did you use?
Apply & Investigate	What happens if you do the experiment in another container—a sealed plastic bag, for example?
Apply & Investigate	What happens if you use more baking soda and keep the amount of vinegar used the same? What if you use more vinegar and keep the amount of baking soda the same?
Apply & Investigate	Are there other baking products that can create CO_2?

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Handout created by Debbie Harris, 4-H Youth Development Educator, Walworth County, WI. 10/2020. November, 2020 Issue.