

Kitchen Science 4th Grade
November 7th

The UNL extension office came to work with our 4th grade students in the area of Kitchen Science. Every experiment they did utilized items found in most kitchens and could be done at home with your child. Here is an overview of what they did and learned!

Acid vs. Base

Materials used:

- Goldenrod paper - this can only be found at an educational store
- Candle
- Ammonia

They learned that NH_3 , Ammonia, is an acid. The PH level means how basic or how acidic something is. Acidic means it breaks down a lot of things. The range is as follows: base 14 → acid 1

Students conducted vial tests with Litmus paper. You can find litmus paper in the garden section. Here were some things they tested.

1. Ascedic Acid 2.5 - Vinegar
2. H_2O 7 - water is neutral
3. NH_3 11.5 - Ammonia
4. Saliva 8 - basic

Lava Lamp Experiment

Materials used:

- Vegetable oil
- Water

Questions posed by our UNL representative:

Q: What will happen when we put my oil in the water?

A: The water is on the bottom, the oil is on top. Water is more dense than vegetable oil.

Q: What happens when I put food coloring in?

A: The density of the food coloring in between the water and oil.

To create the lava lamp effect, add a sodium bicarbonate tablet - baking soda.

This was due to a chemical reaction with the water and sodium bicarbonate.

Can crusher

Using a soda can, put a very small amount of water inside the can. Place it on a bunsen burner, or stove top. Listen carefully - you will hear the water boil - water boils at 212 degrees fahrenheit. You will also start to see steam since the water inside is evaporating.

Very hot air is in the can, it's pushing on the can. When the can was put into an ice water bath, the can was crushed.

The evaporated gas was pushing on the can, super heated wet gas, when it was plunged the super heated gas immediately condensed into water again. Nothing is no longer pushing on the can, which is why it crushed.

Ask your child why the top and bottom of the can does not crush like the middle.

Ask them about the grande finale activity, the crystal ball! This included the use of dry ice, which can be very dangerous. Please make sure to do this with your child if you plan to do this at home.

See some pictures below!



