

SPOOKY SCIENCE

Our young scientists will conduct experiments to test for “poison” and mix “vampire blood” with “garlic powder” for a bubbly surprise.

Kansas College and Career Ready Standards for Science

- 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

Activity: Vampire Blood

Students explore the traditional vinegar-baking soda chemical reaction with a twist – add red food coloring to the vinegar and water and pretend that you’re mixing vampire “blood” with garlic powder.

Materials needed:

- Water colored red – “Blood Sample A”
- Vinegar colored red – “Blood Sample B”
- Baking soda
- Small cups for vinegar and water (separate)
- Small plates for mixing (one per pair of students)
- Eye droppers/medicine droppers (Can be shared between several students. Ask your local pharmacy if they would donate some.)

Please DO NOT refer to the red liquids as “vinegar” or “water” around the students!!! Refer to them as “Blood Sample A” and “Blood Sample B.”

Activity: Zombie Poison Testing

Help students learn about reactions by testing various “poisons” (e.g. lemon juice, vinegar, orange juice, milk, distilled water, egg whites, milk of magnesia, etc.) using goldenrod paper test strips. The paper will turn red in the presence of a base. **Red means “poison.” If it turns it back to yellow it’s an “antidote.”**

Materials needed:

- Variety of liquids to test (lemon juice, vinegar, milk, pop, tap water, coffee, soapy water, ammonia-diluted 1:1 with water for student safety, salt water, milk of magnesia, USE YOUR IMAGINATION!)
- Cotton swabs (a few per liquid being tested)
- Goldenrod paper strips (2 per pair of students) THESE WILL BE MAILED TO YOU
- Small bowls for liquids
- Small plates for a work area (one per pair of students)

Post Activity: Goblin Goo

Let students experiment with “goblin goo”. The borax-glue mixture reveals solid properties when played with, but exhibits the flowing property of a liquid when left to settle. The great thing is goblin goo can be kept near indefinitely so seal it in plastic bags and send it home for further exploration and fun!

Materials needed:

- Borax
- Water
- Glue
- Ziploc bags (one per student)
- Plastic spoons (one per student)
- Green food coloring

To make borax solution

Place 1/8 cup of borax laundry booster into a 1/2 liter of warm water.

Shake until most of the borax dissolves

Let cool

To make Goblin Goo:

1. Place 2 spoonful of Elmer's glue baggie
2. Add 3 spoonful of water
3. Mix by squeezing
4. Add green food coloring to the borax solution. It should be a very dark green color.
5. Measure 1 spoonful of borax solution

6. Dump into baggie
7. Squish the baggie to mix
8. Remove your Goo

What's happening???

The glue has long flexible molecules in it called polymers. These polymer molecules slide past each other as a liquid.

Borax in water forms an ion called the borate ion. When the borax solution is added to the glue solution, the borate ions help link the long polymer molecules to each other so they cannot move and flow as easily.

When enough polymer molecules get hooked together in the right way, the glue solution changes from being very liquid to a rubbery kind of stuff that we call slime!

Lesson Extension:

What else could you try?

Water is an important ingredient in slime. Water helps the polymer molecules slide past each other so that your slime can flow. If you let the water evaporate, your slime will end up like a solid piece of plastic.

Try making other samples of slime with different amounts of water and compare them to your first piece of slime. In each sample, follow the instructions to make the slime that you followed before, but change the amount of water you add to make the glue solution.

Do not add water to the glue. Use only 1 tablespoon of glue to make the glue solution.

Add two tablespoons of water to 1 tablespoon of glue to make the glue solution.

You may choose to give each sample of slime a different color to help you tell them apart.

Program Connections Information

- 1. All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter <https://zoom.us/j/3662120241> in the URL space.**
- 2. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.**
- 3. While it is possible to utilize the internal webcam and microphone in a laptop for the audio and video for the lesson, they do not provide optimal results. An external microphone allows the Greenbush teacher to better hear your students and provides for a more interactive experience.**
- 4. If using a Polycom videoconferencing unit (or any legacy type videoconferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 3662120241 (for Sharon at Science Center).**
- 5. It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational.**
- 6. Classes take place at the following times: 9:00-9:45, 10:00, 10:45, 12:15-1:00, 1:15-2:00, and 2:15-3:00. If you log in early to your class, you may connect during another class' lesson. If you do, please check your connection to make sure things are working properly and then leave the meeting until your scheduled time by selecting "End Meeting" in the lower right corner of your Zoom screen and click on "Leave Meeting". This prevents your site from interfering with the lesson currently in progress. After your lesson is finished, please leave the meeting.**
- 7. If you have questions, please call Sharon Bertolio at Greenbush (620-724-6281.)**

Prior to the IDL lesson, please pre-teach and practice these cooperative learning techniques with your students. These will be used in the IDL lessons this school year.

Round Robin

Each member of the team takes a turn sharing orally with the team.

Rally Robin

With a partner, students take turns sharing brief oral responses.

Timed Pair Share

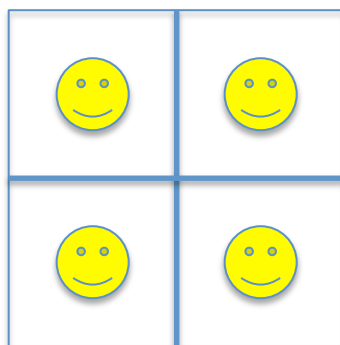
In pairs, students share with a partner for a predetermined time while the partner listens. Then partners switch roles.

Stand Up, Hand Up, Pair Up

Students move around with hands in the air and quickly find a partner with whom to share or discuss. Once students find a partner, they give each other a “high five” and stand together, ready for the next instructions.

More terms to know –

Shoulder Partner:
The person sitting on the student’s right or left.



Face Partner:
The person sitting facing the student.