Triboluminesence

OBJECTIVE: Observe triboluminescence

MATERIALS: Sugar cubes (2 per students)
Roll of masking tape (1 per group)
Wint-O-Green Lifesavers (2 per student, NOT sugar free)

PROCEDURE:

IMPORTANT: Before you begin the experiment, have all your materials prepared, neatly laid out, and within easy reach so that you can find them in the dark!

1. Completely darken room. Cover windows, lights, LEDs, and stuff towels under doors to completely block out ALL light.
2. Allow your eyes time to adjust to the dark – about 2 minutes. When you can see light coming from around the cracks of the door to the hall, your eyes are probably adjusted well enough.
3. Take the two sugar cubes and strike them sharply against each other. Experiment with different speeds and different amounts of pressure. What do you observe? (Make sure you are looking directly at where the sugar cubes are meeting.)
4. Take the roll of masking tape and pull the end quickly off the roll. What do you observe? (Make sure you are looking directly at where the tape is coming off the roll.)
5. Dry you mouth as much as possible by swallowing and sucking air through your back teeth. (And if this isn't the weirdest procedure you've done in a lab, you've got to tell me what was!). Crunch a Wint-O-Green lifesaver on your back/side teeth, keeping your mouth as dry as possible. As many times as you crunch, you should see a blue spark/glow. Take turns with your lab partner observing each other crunching the lifesaver. You'll have to guide your lab partner to show them exactly where your mouth is!

   If you are orthodontically impaired, you may use a heavy weight and crush the lifesaver with it. It will work the same, just be sure and watch out for fingers!!
6. When the lights come back on, be sure and clean up your mess!

OBSERVATIONS: List sentence observations for each part of your experiment. Be sure and distinguish between each type of light you saw. Tell how each was different.

QUESTIONS: *(As always, answer questions AFTER your Conclusion.)*

Cite your Internet source for questions 2 – 4 and insert the URL as a hyperlink. If you don't know how, either Google it or ask for help! Here are a couple of ideas to get started: Purdue Owl: How to Cite an Internet Source, How to Insert a Link in Word (this is a video), and How to Insert a Link in Google Docs (there is a video showing the steps at the end of this one).

1. Explain how atoms give off light.
2. What is triboluminescence? Cite your Internet source and insert the URL as a hyperlink. *(Either Google or ask if you need help!)*
3. What is the current hypothesis to explain the triboluminescence of crystals? Cite your Internet source and insert the URL as a hyperlink.
4. What are the characteristics of candy that produce triboluminescence? Cite your Internet source and insert the URL as a hyperlink.