Mrs. Smith  
Wednesday, March 15, 2017

Problem  
Does electricity flow through a pickle?

Hypothesis  
Students use what they know about conductors to create a hypothesis for this lab

Teacher Prep:  
1. Take a regular extension cord and cut off the end you plug things into  
2. You will find two wires encased in insulation. Break the insulation so the two wires are at least 6 inches apart  
3. Strip the ends of the wires to expose 2 cm of bare wire on each of the two wires  
4. Wrap a penny nail around each of the exposed wires.  
5. You now have a pickle electrocuter

Procedure:  
1. Assign students to groups  
2. Have students draw a diagram that creates a circuit with a pickle in it.  
3. Let them decide how they will know if the electricity is going through the pickle. (they could have a bulb as part of their circuit, or they could say the pickle will glow if there is electricity flowing through it... just a few ideas to get them started)  
4. Give students the materials needed to make the circuit they drew. (No one’s circuit will work)  
5. Act perplexed and have students draw their diagrams on the board so the whole class can analyze them  
6. After they have analyzed and concluded that electricity does not flow through a pickle, say, maybe there just isn’t enough current flowing through the circuit. Maybe you need more power  
7. Bring out your pickle electrocuter and stick one nail into each side of a big pickle (the Jewish pickles at the deli work best)  
8. Make sure the pickle is resting on a non-metal surface  
9. MOVE EVERYONE AWAY FROM THE PICKLE  
10. Plug the other end of the electrocuter into the wall DO NOT TOUCH THE PICKLE OR THE NAILS WHEN IT IS PLUGGED IN (the pickle will glow)  
11. UNPLUG THE CORD BEFORE TOUCHING THE PICKLE  
12. Cut the pickle in half. You will find no evidence of burning

Results  
When the pickle was plugged in electricity excited the molecules in the pickle and made them move very fast. They went past solid, past liquid and even past gas. The molecules moved so fast that they went to the fourth phase of matter, plasma. You will notice when you cut the pickle there are no burn marks. When the pickle was plugged in the electricity from the wall socket moved through the pickle (actually the brine the pickle is soaking in) so fast that their molecule pushed out energy as light. That’s what the yellow glow was. When you unplugged the pickle the energy stopped, so the molecules slowed down to their normal speed and there was no mark or light to see any more.