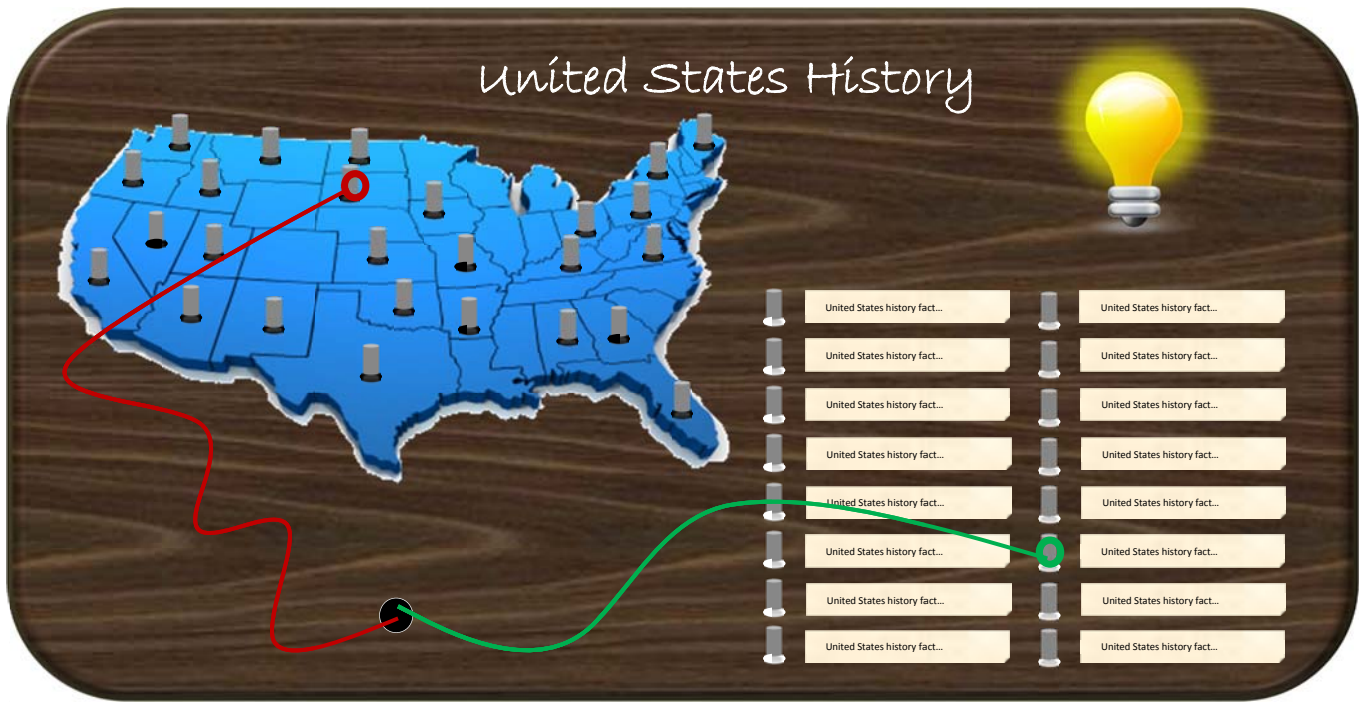
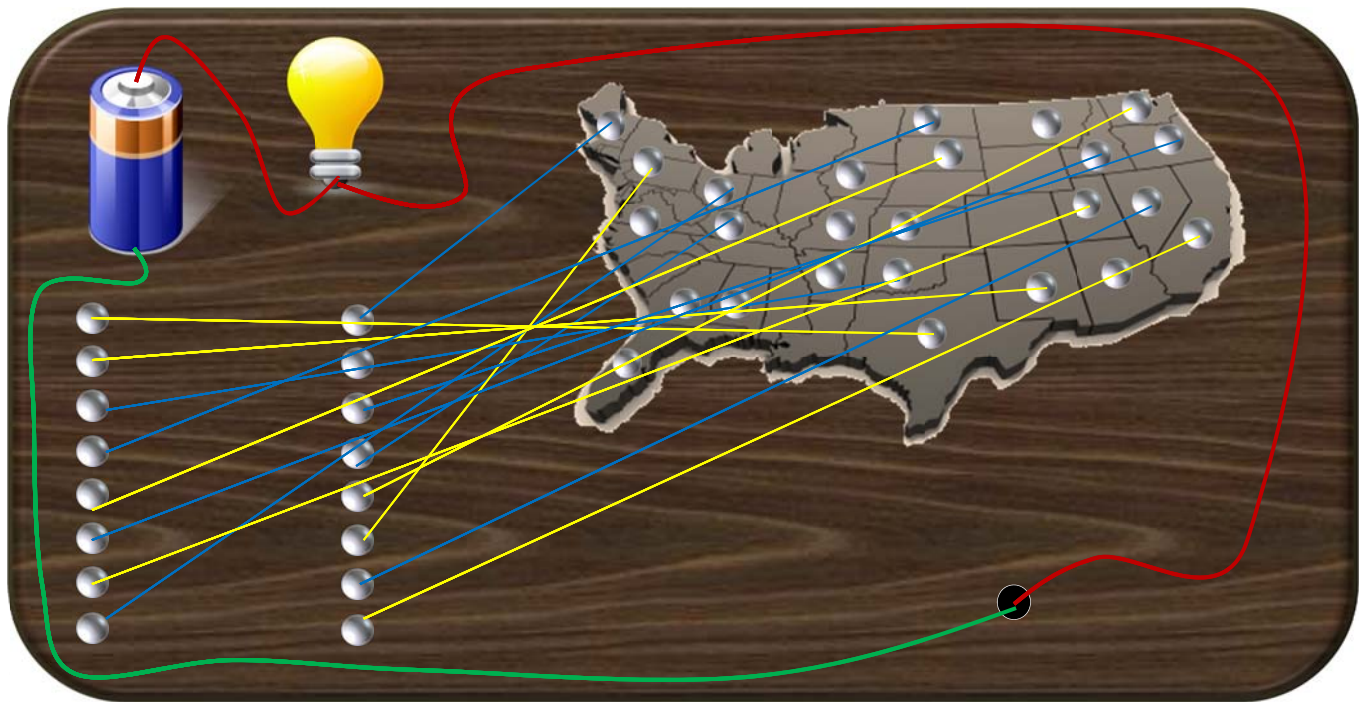


Electronic Game Board: United States History

Front



Back



Student Summary

When I started to design my electronic game board, first I had to decide on a topic. I chose United States History because it is something that I am very interested in and I think that other students in my class can learn new, interesting facts from my game. Next, I chose wood as the perfect material for my board background because it is sturdy and cheap. Also, I discovered in my science class that wood is a good insulator, which means that it does not conduct electricity. This is important because I want to direct and control my electricity in the circuit without any electricity escaping through the board. Also, it is safe because the electricity will not travel through the wood board and into a person's hand if they are holding the game.

Next, I found 16 interesting facts about United States History and I glued the facts on the board. Then I painted a map of the United States. My dad helped me drill holes in the wood for the metal pieces that I placed next to each question and inside some of the states. The metal pieces went through the board, so you can see them from the front or the back. I used metal because I discovered that metal is a good conductor of electricity. I needed to use a material that would move electricity through the circuit, not stop the flow of electricity.

On the back of my board, I connected each metal piece in the map to the metal piece of a historical state fact using insulated wires. It was important to use insulated wires to avoid having the electricity jump from one wire to another. The plastic around the outside of the wire confined the electricity and allowed me to control which state matched with which fact. Also on the back of the board, I placed a size D battery inside a battery holder and connected 2 insulated wires (one on each end).

In my science class I discovered that a circuit needs 3 basic components: an energy source (my battery), transmission wires, and a load that consumes power. For my game board, I chose to use a light bulb for the load because I thought the user might like to see it light up when they got the answer right. I also considered using a buzzer or a doorbell. To complete the circuit, I attached one of the wires from the battery to the light bulb. Then I attached another wire from the bulb, through the hole, and out the front of the board. The second wire that you see on the front of the board is attached to the battery on the back. Lastly, my dad helped me attach metal discs to the ends of the wires. I used metal because it is a good conductor and it would allow a complete circuit.

So here is how it works! The user touches a metal piece on the map with one wire and then uses the other wire to touch the corresponding state history fact. If they are correct, then this will complete the circuit and the flow of electricity through the wires will light up the bulb! But if they are wrong, the circuit will remain broken and there will be no flow of electricity to light up the bulb.