

STRENGTH DETECTOR

Now it's time to show off how strong you are. To do this project you'll need two balls of aluminum foil, each big enough to fit in the palm of your hand. What's going to happen is that as you squeeze the ball of foil in your hand, you'll make a tone. The harder you squeeze, the higher the tone will go. Goodness, gracious, great balls of foil!

Start by connecting #3 to #35

Connect #35 to #38

Connect #33 to #36

Stick one long yellow wire in spring #36, and let it hang there

Connect #4 to #20

Connect #20 to #21

Connect #21 to #23

Connect #22 to #25

Connect #25 to #34

Connect #24 to #37

Connect #37 to #39

And lastly, stick a long yellow wire in spring #19 and leave it there for later.

Ready? Tape each loose end of the yellow wires into its own ball of foil. Connect the battery and then hold a ball in each hand. Do you hear a buzzing sound? If not, check your connections.

Congratulations! Now try your strength. Start squeezing the balls. See how the tone gets higher the harder you squeeze? Let someone else try it to see if they can make the buzzing go higher. Pretty soon, the whole town will be buzzing about how good you're getting with these circuits!

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Here's how the circuit works:

When you squeeze the foil balls, your circuit makes a higher tone....What's going on? Let's think about it in terms of an Electronic Pinball Game to follow the flow of electricity.

The electrons get pushed up from the battery, hit the transformer, bounce to the capacitor, go through you and the aluminum foil and then flow back to the transformer. You and the aluminum balls are part of the oscillation. When you squeeze harder, you're making a stronger connection between the foil and your skin, allowing more current to flow, so the tone goes higher. But if you don't squeeze as hard, the connection isn't as good. Fewer electrons can flow through the circuit, so the tone is lower.

Because sweat conducts electricity, the sweatier your hands, the higher the tone. Since most people get sweaty palms when they're not telling the truth, you can use your Strength Detector as a Lie Detector, too! If someone isn't telling the truth, and they start to sweat, the tone will go higher and you'll find out who took the last cookie!