Name: Date: Class:

Cushions and Capacitance Exit Ticket

Matching Directions: Match each of the following parts of the capacitance sensor you built with its function:

1. Tin Foil: _____
2. Wax Paper: _____
3. Alligator Clips: _____
4. Digital Multimeter: _____

a. Tool used to connect the capacitance sensor with the digital multimeter.

b. Material that is the *conductor* and is used to "sense" when the sensor is pushed.

c. Material that is the *insulator* and is used In between two conductors in the sensor.

d. Tool used to measure and display the capacitance of the sensor.

Patterns Directions: Answer the following questions about the relationship between capacitance as pressure:

The sensor you created doesn't actually measure pressure, but it does measure capacitance which is directly related to the pressure.

1. If you sit on the sensor, you are pushing the pieces of tin foil closer and closer together. This _____ **(increases or decreases)** the capacitance.
2. As the sensor is pushed down, the number shown on a digital multimeter will _____ **(increase or decrease).**
3. If you sit on this sensor, you are pushing the pieces of tin foil closer and closer together, increasing the capacitance, this means that the pressure _____ **(increases or decreases).**

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Data Calculation Directions: A small, light box and a large box were placed on a capacitance sensor in two separate experiments. Calculate the capacitance of each box and answer the questions:

Object	Initial Capacitance (nF)	Final Capacitance (nF)	Object's Capacitance (nF)
Small Box	0.45 nF	0.88 nF	
Large Box	0.40 nF	1.07 nF	

1. Which box has the higher capacitance? _____
2. If you wanted to select the object that would put the *least* pressure on a surface, which box would you choose and why? _____
   _____