Unit A: Experimental Design **Name: _____**

Activity 5: Can You Feel the Difference? **Period: _____**

_____/46 PG:_____

Purpose: To *plan* & do a **controlled experiment** to test a **hypothesis** about a relationship between two **variables**.

Instructions: Read & follow 'Part A' of the procedure starting on page A-21 in your book. Complete steps 1-6 below to *plan* your **experiment**. Then, read & follow 'Part B' of the procedure in your book. Complete steps 7-9 to *conduct* your **experiment**.

Step 1: *State* the **purpose** of the investigation.

_____

_____

Step 2: *Identify* the **study subject**, **manipulated variable**, & **responding variable. (6pt 2pt ea)**

SS = _____

MV = _____

RV = _____

Step 3: State your scientific **question**. (4 pt) *("How does/will SS + MV affect RV?")*

_____

_____

_____

_____

Step 4: *Identify* the **experimental trial** & **control trial**.

ET = **(2pt)** _____

_____

_____

_____

CT = **(2pt)** _____

_____

_____

_____

***Step 5*: (4pt)** State a **hypothesis (about the class's ability to detect 2 point touch vs. 1 point**.

IF (SS + MV)_____

_____

THEN (ET + Prediction)_____

_____

_____

COMPARED TO (CT)_____

BECAUSE (SS, MV, RV & Reason Why)_____

_____

_____

THEREFORE _____

Step 6: List the **controlled** and **uncontrolled variables** in the experiment.

Controlled Variables (min of 2 valid) (2pt)

1. _____
2. _____
3. _____
4. _____
5. _____

Uncontrolled Variables (min of 2 valid) (2pt)

List 2 or more that may affect data and cause error.

1. _____
2. _____
3. _____
4. _____
5. _____

Step 7: Record data. Only test the palm. (testing done by a partner) (2pt)

Data Table 1. Your Touch Response

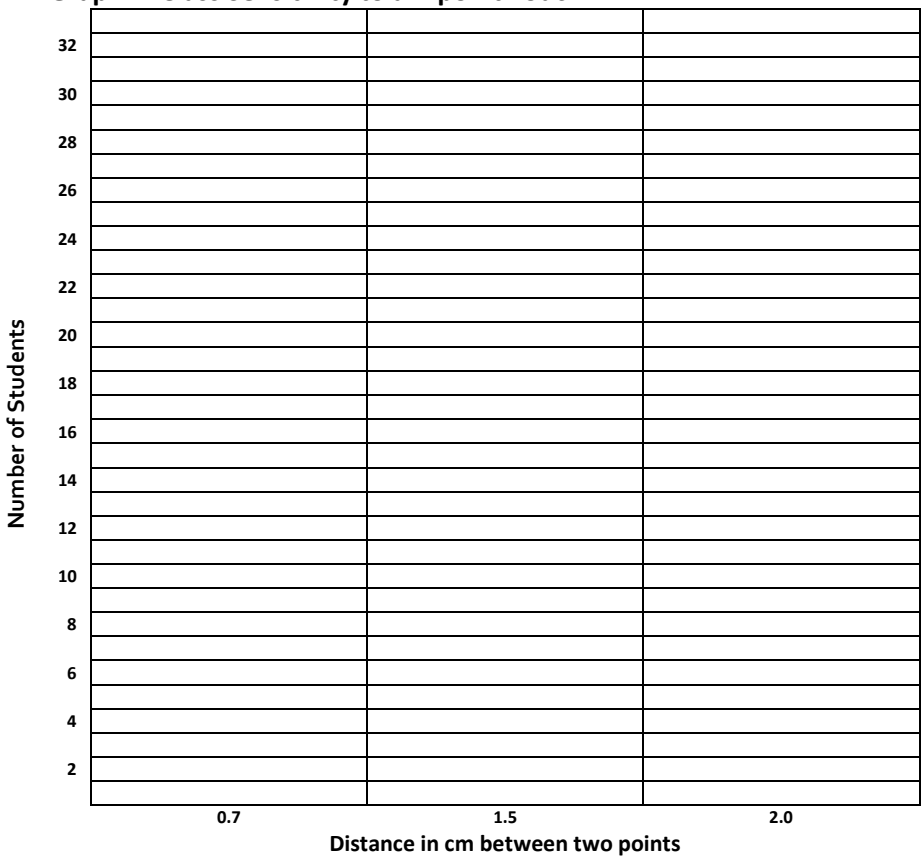
Trial	Points at 0.7 cm	Correct?		Points at 1.5 cm	Correct?		Points at 2.0 cm	Correct?	
1	1	Yes	No	1	Yes	No	2	Yes	No
2	2	Yes	No	2	Yes	No	2	Yes	No
3	1	Yes	No	1	Yes	No	1	Yes	No
4	1	Yes	No	1	Yes	No	1	Yes	No
5	2	Yes	No	2	Yes	No	1	Yes	No
6	1	Yes	No	2	Yes	No	2	Yes	No
7	2	Yes	No	1	Yes	No	2	Yes	No
8	2	Yes	No	2	Yes	No	1	Yes	No
9	1	Yes	No	2	Yes	No	2	Yes	No
10	2	Yes	No	1	Yes	No	1	Yes	No

Data Table 2. Determining Sensitivity of Your Palm (2pt)

Correct number of:	0.7 cm	1.5 cm	2.0 cm
1-point touches			
2-point touches			
Class Total			

Step 8: Analyze data. (4pt)

Graph 1. Class Sensitivity to a 2-point Touch



Step 9: Conclusion. Answer the following 3 questions in complete, quality, and correct sentences in INK.

1. **(8pt) Use Graph 1 and tell what you can conclude about a person's sensitivity to a two-point touch?**

Be sure to: ***a. Tell*** **whether your hypothesis was accepted or rejected.**

b. **Use** ***at least two pieces of data to*** **support this viewpoint.**

c. **Compare the experimental trial to the control trial.** (Add paper if needed)

2. ***Identify*** **two variables that may have introduced error in the results.** ***Tell*** **how each affected the data.**

1. (2pt)

2. (2pt)

3. ***Explain*** **two (useable) things that can be done to improve this experiment.**

1. (2pt)

2. (2pt)