

Name: _____ Class: _____ Date: _____

Our Sense of Touch

Warm Up (5 minutes)

Let's debunk some myths about our senses and brain.

Indicate whether you believe the below statement is **true or false**.

1. Everyone experiences basic senses. _____
2. We have 5 senses. _____
3. Brain regions control specific behaviors. _____
4. The brain itself does not have pain receptors. _____
5. The brain generates electrical energy. _____
6. Our brain and senses are fully developed by age ten. _____
7. The communication from our senses to our brain can travel at speeds of up to 120 meters per second. _____
8. Brain size determines intelligence. _____
9. Some people are 'left brained' and some people are 'right brained'. _____
10. Everyone experiences touch the same way. _____

The Experimental Questions

- Which part of our body is the most sensitive (finger, palm, arm)?
- How diverse is our sense of touch in the 7th grade and what does that mean?

Predictions

- I think the most sensitive part of the body is the _____.
- I think the least sensitive part of the body is the _____.
- I think the sense of touch in the 7th grade will be / will not be diverse.

Procedure

We will be experimenting on the finger, palm, and arm of our body.

1. The subject will close his/her eyes.
2. The tester will place the caliper on the subject’s body part (starting with 50 mm apart) and ask how many points the subject feels.
 - a. If the subject says two points, move the distance 10 mm smaller.
 - b. If the subject says one point for the first time, move the two points apart only 1 or 2 mm at a time until they say two points.
3. Continue this process for the rest of the body parts and record the result.
4. Switch roles until everyone at the table is recorded.

Data

Body Part: 1st Finger	Distance for two point of discrimination (mm)
Participant 1: _____	
Participant 2: _____	

Participant 3: _____	
Participant 4: _____	

Average distance of sensing two points on the finger: _____

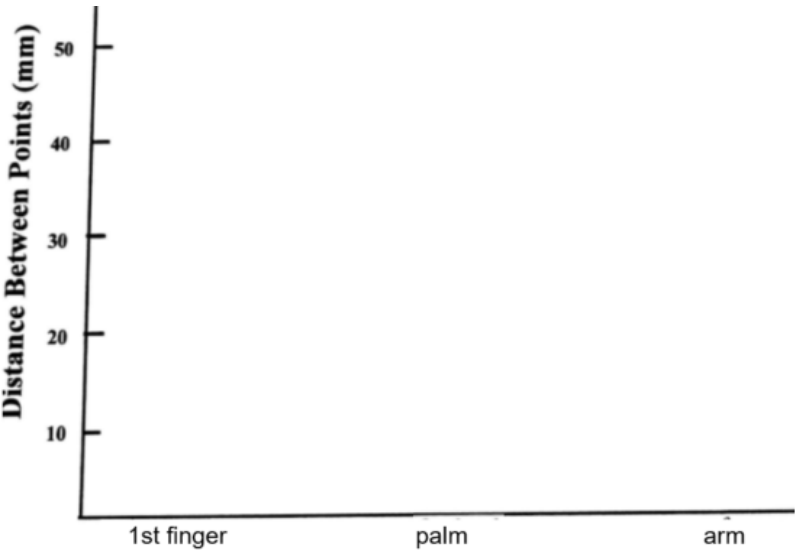
Body Part: Palm	Distance for two point of discrimination (mm)
Participant 1: _____	
Participant 2: _____	
Participant 3: _____	
Participant 4: _____	

Average distance of sensing two points on the forearm: _____

Body Part: Arm	Distance for two point of discrimination (mm)
Participant 1: _____	
Participant 2: _____	
Participant 3: _____	
Participant 4: _____	

Average distance of sensing two points on the forehead: _____

Bar Graph:



Dot Plots:

1st Finger

Palm

Arm

Average Touch for Participants:

Rewrite the measurements where they felt two points and find the average.

	1st Finger	Palm	Arm	Average Sense
Participant 1				
Participant 2				
Participant 3				
Participant 4				

Who is the most sensitive to touch in your group? _____

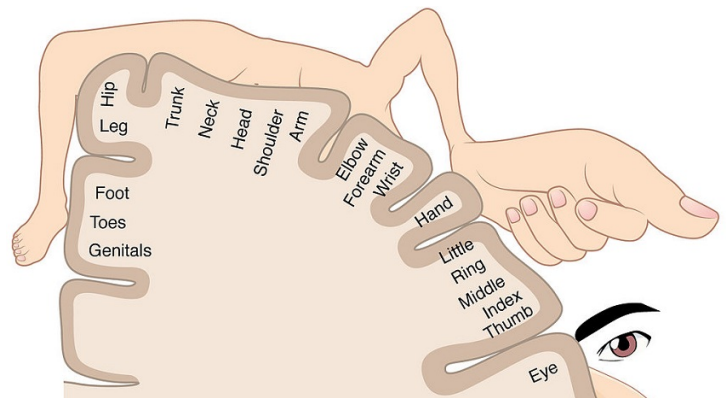
Analysis:

Based on the averages, which body part is best at telling that two points are touching them even when the points are very close together?

Which skin areas do you think have more receptors, areas that have small two-point distances, or large two-point distances? Why do you think so?

Which brain area do you think is larger, one receiving information from skin with lots of receptors, or from skin with a few receptors?

How does the image to the right of our sensory part of our brain support your claim in the question above?



How does information from sensory receptors in the skin get to the brain?

What does the information about the participants' averages tell us about how diverse 7th graders perceive touch?

Evaluate: Reflection Writing

Our brain receives and perceives information all very differently. The diversity of our brains is called neurodiversity. What other questions can we explore about neurodiversity?

Does this bring to mind any scenarios where you saw a student react a different way from the way you would react to something?

Is there any way we can make this study better?

List 3 findings you learned from today's experiment. Were you surprised by anything you found?