



Grades K-12

To demonstrate the exquisite sensitivity of our sense of touch, try this one. Get five to 10 different grades (roughness) of sandpaper from the hardware store. The degree of roughness should be printed on the back. Cut the sandpaper into pieces about 3 in by 3 in. (If you want to get fancy, you could glue the sandpaper on to block of wood, but this is not really necessary) Make sure you write down the grade of roughness on the back of each cut piece of sandpaper! Mixup the pieces of sandpaper and place them with the rough side up. Using your (or have someone else do it) finger, line up the pieces of sandpaper in order...from the smoothest to the roughest.

Questions and Comparisons:

Check to see if you (or your test subject) did it right. Where were mistakes made? At what grade of sandpaper?

Materials:

- Sandpaper - various grades
- Wood Blocks (optional)

2-Point Discrimination

Grades 3-12

A complete LESSON PLAN with teacher and student guides is now available.



What areas of our bodies are most sensitive to touch? Hands? Feet? Fingers? To find out, perform a 2-point discrimination exam on a friend. Bend a paper clip into the shape of a U with the tips about 2 cm apart. Make sure the tips of the U are even with each other. Lightly touch the two ends of the paper clip to

the back of the hand of your subject. Your subject should not look at the area of skin that is being tested. Do not press too hard! Make sure both tips touch the skin at the same time. Ask your subject if he or she felt one or two pressure points. If your subject reported one point, spread the tips of the clip a bit further apart, then touch the back of the subject's hand again. If your subject reported 2 points, push the tips a bit closer together, and test again. Measure the distance at which the subject reports "I feel two points."

Questions and Comparisons:

- Try different parts of the body: the arm, leg, fingers, back, neck, head, hand, toes.
- Compare the distances required for a "I feel 2 points" response on different body regions.
- What part of the body is most sensitive? In other words, where on the body can 2 points be detected with the smallest tip separation?

The receptors in our skin are NOT distributed in a uniform way around our bodies. Some places, such as our fingers and lips, have more touch receptors than other parts of our body, such as our backs. That's one reason why we are more sensitive to touch on our fingers and face than on our backs.

Site	Threshold Distance
Fingers	2-3 mm
Upper Lip	5 mm
Cheek	6 mm
Nose	7 mm
Palm	10 mm
Forehead	15 mm
Foot	20 mm
Belly	30 mm
Forearm	35 mm
Upper arm	39 mm
Back	39 mm
Shoulder	41 mm
Thigh	42 mm
Calf	45 mm

These data (rounded) are from a 2-pt discrimination threshold experiment (published in *The Skin Senses*, edited by D. R. Kenshalo, Springfield, IL, 1968).

How did your measurements compare?

Materials:

- Complete lesson plan for this experiment!
 - Paper clip (or a map pin)
 - Pencil and paper to track responses.
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