SNC 2DI Date: _____

Mapping Sensory Receptors in the Skin

Purpose: to explore the touch sensitivity of the skin

Background:

Human skin consists of several types of receptors. Each receptor senses a different kind of external stimulus. There are pressure receptors, heat receptors and pain receptors. The number of receptors in a given area of skin varies according to the location of the area on the body.

Predict which area of skin you think will have the highest concentration of pressure receptors. Rank the following from 1 (lowest concentration or least sensitive) to 5 (highest concentration or most sensitive).

Area of Skin	Concentration of Pressure Receptors
palm of hand	
back of hand	
inside forearm	
back of neck	
forehead	
cheek	
elbow	
knee	

Procedure:

1. Have your partner sit in a chair or stool with his/her arm on the desk, palm facing upward. The person will have their pressure receptors tested first. The person's eyes should be closed!
2. You will test areas of skin in the following order: palm of hand, back of hand, inside of forearm, back of neck and forehead.
3. Beginning with your paper clip ends 15mm apart; gently touch them to the palm of your partner's hand. Ask him/her if they feel 2 points or 1 point. Record (1 point or 2 points) in the table. Repeat for 8mm and 2mm.
4. Repeat step 3 for all other locations and record results in the table.
5. Switch places with your partner and repeat the entire procedure.

	Palm of Hand	Back of Hand	Inside Forearm	Back of Neck	Forehead	cheek	elbow	knee
15 mm								
8 mm								
2 mm								

Questions:

1. Compare your results to the predictions you made at the beginning. Remember, the less the separation of paperclips the more sensitive the area is. Which part of skin was most sensitive to the paperclips? Did you predict the right area?

2. Why is it helpful for humans to be most sensitive to the pressure area you found to have the highest concentration of pressure receptors?

3. Why is it not helpful to have the same high number of receptors in every area of your body?