Double

Purpose
To demonstrate that the brain can be tricked.

Materials
2 unsharpened pencils  
Friend

Procedure
1. Prepare your friend for this experiment by showing the two pencils and explaining that he or she will be asked to determine the number of pencils used in each part of the experiment.
2. Ask your friend to rest his or her elbow on a table and to separate the index and middle fingers of one hand as wide as possible.
3. With your friend looking away, hold the two pencils together and place them between the separated fingers so that each finger touches one pencil. Tell your friend to gently close the fingers. Move the pencils back and forth between your friend’s fingers two or three times. Ask your friend how many pencils are felt.
4. Ask your friend to cross his or her index and middle fingers as shown. With your friend looking away, place one pencil between the two fingers and rub it back and forth two or three times. Again ask your friend how many pencils are felt.
Double

Results
At first two pencils feel like one, but with your fingers crossed one pencil feels like two.

Why? With crossed fingers, their outsides (sides normally facing away from each other) touch the pencil at the same time. Nerves (fibers that carry messages to and from the brain) from the outside of both fingers send messages to the brain that they are touching a pencil. The brain interprets the messages to mean that two pencils are being touched. With the fingers in their normal side-by-side position, nerves from the inside of the fingers send messages that they are touching a pencil. Usually only one object touches these sides, so the brain interprets the messages to mean one pencil is being touched.