Optical Sensors

Objective	Determine if two optical sensors are better than one. You could ask the question: why do we have two eyes?
Supplies	Two pencils. If you don't have pencils, check out the footnotes.[1] Two eyes (of course!)
Directions	1. Hold a pencil in each hand, far apart with the erasers facing each other.[2] 2. Hold the pencils horizontally (that means they are on their sides, not up and down).[3] 3. Close your left eye. 4. Now slowly move the pencils toward each other. 5. Try to touch the erasers together. Did you miss? 6. Now try it with your right eye closed. Did you miss? 7. Now try it with both eyes open. Likely this was easier for you.
Outcome	When you have both eyes open, you have better depth perception.
How does it work?	Depth perception is the ability to perceive the relative distance of objects. With both eyes open, you are less likely to miss when you try to touch the erasers together. You are better able to tell how far away each pencil is from your face and you are more likely to be able to touch the erasers.

[1] Scientists love to use footnotes. They use them to add clarifying information to a document. So, here is your clarifying information. Technically, you could do this experiment with something other than pencils. Try your fingers!

[2] You could face the pointy ends toward each other, but then you might need to visit the nurse's office for a bandage.

[3] The opposite of *horizontally* is *vertically*. This stunt would not work if you held the pencils that way.