

## Senses Experiment: Brain Box- Exploring the Sense of TOUCH

### Supplies needed:

A pillowcase (or use the STEM Bag)  
One long sock  
Items to fill the pillowcase (for example, cup, spoon, ball, block, fruit, sponge, rock, a small bell, cotton ball, pine cone, feather, wood letters or numbers)



### Setting up the Experiment:

1. Put all objects in the case.
2. Ask your child to reach into the pillowcase and try to identify objects.
3. Now try with a sock on their hand – is this harder? Why?
4. See how many items your child can identify with the sock on their hand.
5. Now... Let them see what was inside the box. See how easy it is now when all senses are restored! Is it easier to guess if you can TOUCH and SMELL? Are using all the senses together better than just using one?

**Key Word(s):** five senses (touch, smell, taste, hearing, seeing), nerves (carry information from your sense organs e.g. nose to the brain)

### How it works:

Touch combined with sight, hearing, and smell is much more effective. It's even tougher to identify objects if you don't have your full sense of touch, like if you have a sock or glove on your hand.

### **What is the Sense of Touch?**

Your sense of touch, unlike your other senses is not restricted to any particular part of your body. The sense of touch originates at the bottom-most layer of your skin called the dermis.

Your dermis has millions of tiny nerve endings which relay information about the objects, textures and temperatures that come into contact with your body. It relays this information to your brain in the form of small electrical impulses sent via the spinal cord that tells you whether something is hot, cold, rough, smooth or sticky.

### **There are mainly four common receptors sending information to your brain:**

1. Heat
2. Cold
3. Pain
4. Pleasure

Each of these nerve endings are responsible for telling your brain when it is exposed to a particular type of stimulus. Certain parts of your body like the fingertips, lips and face have more nerve endings than the rest of the body, which is why they are more sensitive to touch.

Some parts of body contain more of one type of receptor than the rest. Like your tongue, this has more taste receptors and fewer heat and cold receptors.

**CfE Links:** Investigative & Inquiry Skills and SCN 0-12a/1-12b/2-12b



**On-line Links:**

The Five Senses | The Dr. Binocs Show | Educational Videos for Kids can be found on YouTube (<https://www.youtube.com/watch?v=q1xNuU7gaAQ>)

<https://handsonaswegrow.com/48-sensory-bags-roundup/> has lots of examples of sensory bags that pupils could make for younger children to explore.

The Royal Institution Experimental (<http://www.rigb.org/families/experimental/about>) has lots of science videos to help you bring science home with simple and inexpensive experiments.

The Dad Lab on YouTube ([https://www.youtube.com/channel/UCC\\_hy0u9-oKINdMKHBudcQ](https://www.youtube.com/channel/UCC_hy0u9-oKINdMKHBudcQ)) also has lots of simple experiments to try at home with videos showing you how to do them.

<https://www.britishscienceweek.org/> has activity packs and citizen science projects with new ones each year for the annual British Science week in March.