

# USC Interaxon Brain Activities

It's important to keep your brain active during this time, so try some of these activities to keep busy and have some fun! These activities and MORE can be found on the website

<https://faculty.washington.edu/chudler/experi.html>.

Check it out for other fun experiments! Here are some of our favorites:

## 1. Pipe Cleaner Neurons

- Definition of neurons: specialized nerve cells that help transmit information throughout the body
- Materials: 5 different color pipe cleaners, scissors
- Make the neuron:

**Step 1:** Make the cell body: Roll one pipe cleaner into a ball.

**Step 2:** Make the axon: Attach another pipe cleaner to one side of the cell body by pulling it halfway through the ball. Twist the two halves of the pipe cleaner you pulled through together.

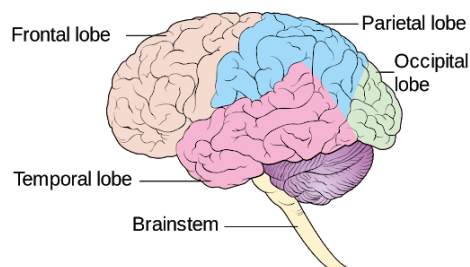
**Step 3:** Make the dendrites: Cut a pipe cleaner into 5 parts. Attach the small pipe cleaners to the other side of the cell body. They should stick out from the cell body and be shorter than the axon.

**Step 4:** Make the myelin: Cut another pipe cleaner into smaller parts. Twist small pipe cleaners around the axon. Leave spaces between each one.

**Step 5:** Make the synaptic terminal: Wrap  $\frac{1}{2}$  pipe cleaner around the end of the axon opposite to the cell body side.

## 2. Play-Doh Brains

- Materials: Clay or Play-Doh, picture of brain
- Follow a picture or diagram of the brain (like the one below), and shape the clay/play-doh into the appropriate sizes and shapes of each lobe/part of the brain.



### **3. Egg Carton Spinal Column**

- Materials: 12-egg carton, scissors, pencil, pipe cleaners
- Make the spinal column:

**Step 1:** Cut the 12-egg carton into separate pieces (cut it so that each egg holder is separate).

**Step 2:** Use the pencil to poke holes in both sides of each piece so that you would be able to feed a pipe cleaner through both sides through the holes.

**Step 3:** Take the pipe cleaner and start feeding it through all of the pieces one at a time. If you need a longer pipe cleaner, twist one end of another pipe cleaner onto the one you are using and continue.

**Step 4:** When you are done putting all of the carton pieces onto the pipe cleaner in a line/column, bend both ends of the pipe cleaner so that the pieces do not fall off.

### **4. Memorize It!**

- Materials: 10-15 small items, cloth/towel, pen/pencil, paper
- Play with other people!

**Step 1:** Have one person collect 10-15 small items and place them on a tray or table while the others are not looking.

**Step 2:** Have the other person/people look at the objects for one minute. Their goal is to memorize as many items as they can in one minute.

**Step 3:** After one minute, cover the objects with the cloth or towel. Have the other people write down as many objects as they remember.

**Step 4:** Switch roles! Try out some memory tips like visualizing the words and creating a mental picture to see if anyone improves!

### **5. Don't Damage the Egg Brain!**

- Materials: 2 eggs, markers, container, water
- Definition of cerebrospinal fluid: helps protect the brain from injury, like a cushion
- Let's see what happens if you don't have cerebrospinal fluid!

**Step 1:** Decorate your two eggs with waterproof markers.

**Step 2:** Test the brain without any cerebrospinal fluid. To do this, place one egg into the container, and put the lid on. Then, shake the container. Notice what happens to the egg, which is your brain in this experiment (it should crack, break, and spill).

**Step 3:** Test the brain with cerebrospinal fluid. To do this, fill the container with water. Place the second egg in, and place the lid on top. Now, shake the container around. The egg should not break because it is surrounded by water, which represents the cerebrospinal fluid that cushions the brain to avoid injury.