A Few More Short Demos

Presented at the New Jersey Science Convention - 2001

Submitted by Ron Durso

1. HUMAN HEART WALK-THRU REVIEW:

Have students walk through a diagram of the
human heart which you have drawn on a drop cloth from home-depot. Have students name the parts of the heart as they walk through. They may also pick up a piece of popcorn in the lungs to represent oxygen, and then drop it off after leaving the aorta.

2. GEL ELECTROPHORESIS:
A way to help students remember the direction of flow through a gel apparatus: "Black to the back, run to red."

3. MECHANICS OF BREATHING:
If you don't have a fancy lung chamber with a rubber diaphram on it, grab a beaker. Hold the beaker upside down. Cover the opening with your hand. Move your hand down to demonstrate how the chest cavity increases in volume during inhalation. Move your hand up to show how the chest cavity decreases in volume during exhalation. Ask the students what happens to the pressure in each case.

4. DIFFUSION:
Cut a potato in half. Place some salt on top of it. Have students predict what will happen. Extension: Have student predict what will happen if they hollow out a dent in the potato. (Surface area increases diffusion.)

5. NATURAL SELECTION:
Buy some beads in two different colors and some felt in the same colors, red and white for example. Place the beads on the red felt. Turn off the lights. Have the student try to pick up as many beads as possible, one at a time, using two fingers. Then change the background to white. Have a student repeat the experiment.

Note: the experiment doesn't work perfectly, but the students will get the point, as it is simple to understand.

6. NERVE IMPULSES:
Have the students do the wave. Ask the second student how she knew when to stop. This demonstrates the idea of communication. Then you can tell them that they have just acted out what occurs inside the neuron. When student 1 has his hands up, he is positive, then when he lowers them, he is negative. Then when student 2 has her hands up, she is positive, and so on. This helps students understand the propagation of the charge.

Submitted by Kelly Tetley

Fossil Dig
Materials:
plaster of paris, water, fossils (leaves, little plastic animals, or acorns....), cups, pick or dissecting tool
1. Mix plaster of paris with water and bury a fossil in it
2. Have students be Archeologists on a dig, when they scrap away at the hardened plaster of paris, they will find the fossil

Replication demo
You or your students can make enlarged nucleotides, have them laminated and put magnetic tape on the backs of them. You can have students replicate, or transcribe on the black board with the model nucleotides....