

Andrew Seaman  
Shannon Urza  
Kandi King  
2-1-04

## Modeling Plan

Vestibular function in regards to how it affects our balance and eye movements:

To demonstrate this, we will construct hula-hoop sized circular tubes filled with clear fluid and paintbrush bristles inside. We will have the children hold the tube around their waists and spin in circles to demonstrate how the semicircular canals work. The paintbrush bristles will model the hair cells within the ampula. The fluid in the tubes will model endolymph and the tubes will be the canals. When the children stop spinning, they see the fluid in the tube continue to move and displace the bristles. This will show why they are dizzy after spinning.

We will make a poster to show what the actual semicircular canals look like inside the ear. We will also have an expanded three dimensional model of a few hair cells. It will demonstrate the physical gating mechanism through an electrical circuit where a switch is activated by movement of the hair cells. When the switch is moved, it will activate a string of lights that will model the signal being sent to the section of the brain responsible for vestibular function. The lights will continue to a picture of the vestibular area of the brain, to the oculomotor area of the brain, and finally to the eyes to demonstrate how the hair cells have an indirect affect on eye movement. The kids will then be able to see this in person by watching a partner spin and noting his or her eye movement.