POWERS OF TEN DEMO

GOAL: Demonstrate to the visitors the concept of measurement, specifically the scale of things on the nanometer level.

MATERIALS:

Meterstick
3 different sized boxes
4 images

PROCEDURE:

Set-up

1. Place nanometer scale image in the smallest container.
2. Place small box in medium container, and medium box in large container.

During the demonstration

1. Explain to the visitors the idea of scale and discuss how it is we measure various objects.
2. Use the meter stick to help start of the demonstration, it will be the first size scale that will be introduced.
3. Measure a couple of the visitors to the meterstick, so they have a concept of the scale. Show visitors the first box with the meter picture.
4. Explain to the visitors that the things in our bodies are much smaller than a meter. Go to the next size scale of a millimeter, and ask audience members if they can think of anything on their body that is of size (i.e. width of tooth). Show the size of a millimeter on the meter stick.
5. Have a visitor open the container to find the picture of a millimeter. Ask audience if they recognize the picture (taste bud).
6. Have another visitor open the second container to reveal the next scale picture of a micrometer. Ask audience if they recognize the picture (cell membrane).
7. Finally, have a final audience member open the third container to reveal the next scale picture of a nanometer. Ask audience if they recognize the picture (molecule).

EXPLANATION:

Many of the biological processes that occur in our bodies are on the nanometer scale. In order for these processes to take place, nano-scale molecules have to help transport messages to the cells in your body. To help understand how these molecules work in the body, the following activities will demonstrate various activities that go on in our bodies on the nano-scale.