Nothing to Sneeze At

Grade Level: 1

Strand: Understanding Life Systems

Topic: Needs and Characteristics of Living Things

Specific Expectation:
- identify personal action that they themselves can help to maintain a healthy environment by practicing cleanliness to reduce the spread of germs.

Materials Needed
- Tire pump
- Large balloon
- Confetti
- Pin
- Tape
- Tape measure
- Large piece of cardboard
- Funnel
- Chalkboard and chalk

Procedure
1. Place a measured handful of confetti in a deflated balloon. Use a funnel to help you get all the tiny pieces into the mouth of the balloon.
2. Use a tire pump to blow up the balloon. (This will keep the confetti from getting too wet.)
3. Inflate the balloon as full as possible without popping.
4. Stand in a large clear space in the classroom, mark the place that you stand with the tape and form an X. Mark lines on all four sides of the X at intervals of 30 cm, 60 cm, 94 cm and 122 cm. (See photo above).
5. Return to the X and pop the balloon with a pin.
6. Count the number of confetti pieces that fell within 30 cm from the X. Next count the pieces of confetti that fell within 60 cm of the X. Continue this process until you have reached 122 cm. Record your findings.
7. Do the experiment again, this time holding a large piece of cardboard in front of the balloon before you pop it. Count the pieces of confetti in each circle from your zero point again.

Scientific Principle
This experiment acts as a representation of the physiological function of sneezing and how far germs can be spread when sneezing without using proper protection (e.g. using your arm as a cover). Sneezeing is the act of removing harmful substances from the body. A sneeze is formed by the spasm of the chest and of the pharynx that connects the esophagus and the nasal cavity. When the nerve endings in the nose get irritated by unwanted substances, they send messages to the brain which then sends messages to the chest muscles to squeeze the lungs. The pharynx
closes which stops the air from being expelled from the mouth and therefore causes the air to project from the nose, along with anything that is in it. In this experiment, the balloon acts as the lungs which are filled with air while the confetti represents the germs and the hole created by the pin is the nose. When a hole is created by the pin, the air is projected from the balloon just as in a sneeze when the air is expelled from the lungs. The confetti is sent through the hole in the balloon, just as the germs in the mouth would exit from the nose.

References

Opportunities and Other Considerations
• Show Panda Sneeze  http://www.youtube.com/watch?v=FzRH3iTQPrk
• Safety, students may wear goggles
• Use varying sizes of cardboard to determine how far germs can travel when covered or partially covered
• Use different materials instead of the confetti (e.g. dirt, washable paint)
• Use different sizes of balloons (small sneeze vs. large sneeze)
• Experiment outdoors to determine wind as a factor for spreading germs.