**Root Wedging Model**

**Objectives**

1. To model root wedging
2. To evaluate the strengths and weaknesses of a model

**Material List**

1. soil
2. water
3. Container for mixing mud (I use plastic sandwich bag)
4. plastic cover for desktop
5. helium quality small balloon

**Procedure**

1. Mix soil and water to make a mud pie. It should be firm, not watery and not dry.   
2. Put down plastic in the area of the room where the mud will be allowed to dry.   
3. Cover the balloon with the mud leaving only the neck and mouth of the balloon uncovered.   
4. Allow the mud to dry anywhere from 30 minutes to a full 24 hours works well.   
5. Slowly inflate the balloon and record the results. NOTE:If students inflate the balloon rapidly the mud will fly apart, hence the goggles.   
6. Explain how this model is like root wedging.   
7. Explain how this model is different from root wedging.

Safety - be sure the mouth of the balloon is free of mud.   
Allow only one student to blow on each balloon.   
Have students wear safety goggles.

**Extensions/Additional Comments**

Have students take photos or make drawings of examples of root wedging they see in their neighborhood.

**Assessment**

4 points a student should respond to the differences and likeness between the model and the real world.

1. The model is like root wedging because
   * it shows how a rock or something can be lifted by something that does not appear to be very strong.
   * the mud cracks apart like rocks crack apart from wedging.
2. The model is different from root wedging because
   * the reaction occurs very rapidly root wedging is very slow.
   * the balloon expands due to air. the root expands due to cell growth.
   * roots are not balloons
   * the mud is not as hard to break as a rock