

PLATE TECTONICS WITH AN ORANGE

INTRODUCTION

The Earth's crust is not a continuous piece, but consists of separate "plates" some of which about each other. These plates slowly move around on the Earth's surface.

PURPOSE

To acquaint the student with the concept of plate tectonics.

MATERIALS

- oranges, preferably small "cuties" or tangerines
- toothpicks
- clay or play dough (optional)

PROCEDURE

- 1) Have the students peel the orange in as few pieces as possible, without the use of a knife. This peel represents the Earth's crust. The crust is in pieces just like the orange peel.
- 2) Have the students lay the orange peel out on their work surfaces and record their observations.
- 3) Tell the students to replace the peel on the orange, securing the peel with toothpicks.

DISCUSSION to accompany each step in the procedure

- 1) Peel orange
 - a) The Earth is spherical like the orange although it is difficult to see the roundness of the Earth except from space.
 - b) What did the students observe when the orange peel was lying on their work surfaces? Did they notice that the pieces flattened out? The pieces didn't appear to be as round as they were when attached to the orange.
- 2) Put peel back onto orange
 - a) Now that the peel is back on the orange, this better represents the Earth's crust. The cracks between the plates are called faults. Convection of heat from the interior of the Earth causes movement of the plates (represented here by the orange peel pieces) and related volcanoes.

EVALUATION:

- 1) How do the continents fit into this model that represents the plate theory?
- 2) How can the model be modified to represent the spaces between the continents, the oceans? Remember that the crust actually covers the whole earth, not just the continents.

