

# BUILDING GLACIERS

GRADE LEVEL: 4 - 8

## OBJECTIVE:

Students will be able to explain the impact the glaciers had on the land that they covered.

## MATERIALS:

Sand or loose soil  
Cardboard box 12" x 24" or a cat litter tray  
Brick or cinder block  
Match sticks or small twigs to represent trees and plants

## PROCEDURE:

1. Distribute materials to each group of students.
2. Have the students create a landscape in the box with hills and valley, trees and shrubs.
3. Have the students place a brick or cinder block on the landscape. After a few minutes remove the brick and measure the depression created in the landscape. This is called compaction and happens in nature



Glaciers covering North America

when something very heavy like a glacier pushes down on the land.

4. Replace the brick in the sand and slowly push the brick across the landscape from one end to the other. What happens as the brick is being pushed? (Soil and 'trees' are pushed out of the way, the ground is leveled and the soil piles up in front of and on either side of the brick.)

5. You have formed a model of a terminal moraine that is a pile of sediment where the glacier stopped moving forward. Lateral moraines were formed along the side of the glacier as it moved forward just as they did when the brick was pushed along the landscape. Have students find a map showing the end moraines in Indiana. How wide were they? Find information from the Indiana Geological Survey's web page: <http://igs.indiana.edu/>

## EXTENSIONS/EVALUATIONS:

6. Have students find out how many glacial ages have occurred in Indiana? When was the last one? When is the next one expected?
7. Have the students mark the times of the glacial ages on their time line chart.
8. Have students look at a glacial map of Indiana. What would happen to a north flowing river as glaciers moved south across the state?



Comparing a glacier to Louisville