

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Sticky Spots

## How does temperature affect a tar pit?

In this hands-on activity, investigate how changes in temperature affect how tar pits trap animals.

**Observe:** Mammoths and other ice age animals got trapped in sticky tar pits.

**Ask a Research Question:** How does temperature affect the consistency of a tar pit?

**Form Hypotheses Based on These Questions:** Will a mammoth's foot sink faster into a warm tar pit or a cool one? Which will be easier to escape?

**Materials:** smock • newspaper • two same-size drinking glasses • measuring cup • molasses • spoon • two same-size bowls • warm water • ice water • two 3-ounce paper cups • 60 pennies • two same-size rubber bands • pencil and paper

### Procedure:

1. Put on a smock and cover the desk with newspaper.
2. Make two model tar pits. Measure 1/4 cup of molasses into each glass, using the spoon to scrape it all in. The sticky molasses represents tar.
3. Fill one bowl about an inch deep with warm water. Fill the other with the same amount of ice water. Place a tar pit in each bowl. Let them sit for 10 minutes.
4. Meanwhile, make "mammoth feet." Put 30 pennies in each paper cup. Wrap a rubber band around each cup to form a handle over the opening. Make sure the rubber band is in the center of the cup.
5. After 10 minutes, remove the glasses from the water and place them on the newspaper. Pick up both "feet" by their handles. Lower one into each glass until the bottoms of the cups just touch the tar. Then drop them at the same time. Which sinks faster? Record your observations.
6. Now test how much force it takes to escape each tar pit. Push the mammoth feet to the bottoms of the glasses. Hook a finger under the handle of each foot and slowly pull up. Which is easier to remove? Record your observations.

### Results:

In which tar pit did the mammoth foot sink faster? Which was harder to escape?

### Conclusions:

1. How did the temperature of a tar pit change its effect on a mammoth foot?
2. Based on your results, when do you think animals would be most likely to get trapped in tar pits? Explain your reasoning.