

Name:

Date:

## Wintertime Albedo Experiment

### Introduction

Albedo is the fraction of incoming solar radiation (sunlight) that is reflected back into space. Objects that are very dark in color *absorb* most of the incoming radiation (causing them to heat up) and have a low albedo, while objects that are very light in color *reflect* most of the incoming radiation and have a higher albedo. In this experiment you will place painted lids on the snowpack to measure the amount of snowmelt from the different lid albedos.

### Materials:

Metal lids painted a variety of colors

Pencil

Ruler(s)

### Step 1: Set up Experiment

1. Find a location with a deep snowpack that won't be disturbed for the extent of the experiment.
2. Place colored lids directly on snowpack, about 1 foot away from each other.
3. Record the date and time and the sky conditions below:

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Sky Conditions: \_\_\_\_\_

### Step 2: Make Predictions

Use the table below to record your predictions for the depth of snowmelt under each lid color.

Table 1. Predicted Snowmelt

Lid Color	Predicted snowmelt (cm)

### Step 3: Obtain Results

1. Return to experiment site
2. Without disturbing the lids, measure the depth of the snow melt (from the top of the snowpack to the lid)
3. Record the date and time below, and measurements in Table 2

Date: \_\_\_\_\_ Time: \_\_\_\_\_



Table 2. Actual Snowmelt

Lid Color	Actual snowmelt (cm)

**Discussion questions:**

Which color lid resulted in the most snowmelt? Which resulted in the least?

How did your predictions compare with the actual depth of the snowmelt? Why?

What new questions do you have after completing the experiment?

