Snow Volume, Temperature, and Density

Form groups of three students.

Observe the demonstration showing (1) how to take a snow sample; and (2) how to measure the temperature of the snow at the snow surface and at the bottom of the snow (the interface between the snow and the ice or the ground).

Person 1 – Get snow data sheet, pencil, black marker, snow sample tube, spatula, and ruler.

1. Measure and record the inside radius of the **tube** _____cm.

2. Record the depth of the snow in centimeters.

3. Push the tube down into the snow to take a **snow sample**

4. **Spatula** – place spatula under the tube to lift up the snow sample

Person 2

1. **Plastic bag** – Using the black marker, write the location (or stake #) on the bag.

2. Hold plastic bag so that **Person 1** can dump the snow sample in the bag.

2. **Balance** – Use the electronic balance to measure the **mass** of the bag of snow in grams (remember to subtract the mass of the bag).

Person 3 – Get Snow Temperature probe

1. Record temperature at bottom of snow.

2. Record air temperature at beginning and end of transect.

3. Record temperature of surface of snow at beginning and end of transect.

Group data analysis

Calculate density of snow sample using the formula on the following page. You will retrieve **data** from every person in your group.

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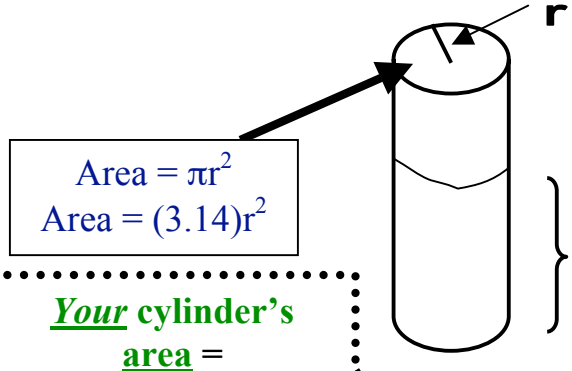

Area = πr^2
Area = $(3.14)r^2$

Snow depth (in cm)

Your **cylinder's area =**
3.14 x ____ x ____
= _____ cm^2

Your **snow depth =**
_____ cm

Your **cylinder's volume of snow =**
area (cm^2) x snow depth (cm) = _____ cm^3

Bag of snow mass = ____ g
minus
Mass of bag - ____ g
= Snow mass _____ g

Calculate!

DENSITY OF SNOW =
$\frac{\text{Mass (g)}}{\text{Volume } (cm^3)}$
Your mass _____ ÷
Your volume _____ =
_____ g/cm^3

Did you Forget??

Snow Surface Temperature = _____ °C

Snow-Ground Interface Temperature = _____ °C