Snow Pit Procedure

1. Pick an area that is on the uphill slope and away from any obstructions.
2. Record air temperature and wind speed.
3. Stick avalanche probe in the snow until you hit the ground and record the depth in cm.
4. Draw a line in the snow at least 2 people wide. Starting at the line, dig all the way down to the ground (or a good amount to have a section of snow exposed), and continue digging back for at least 2-3 feet.
5. When the snow pit is complete, use a shovel and then paint brushes to get the wall of the snow pit as smooth and straight as possible.
6. Determine the weight of a sample of snow. Take the collection cup and fill it with snow. Do not pack down the snow in the cup, just fill it up, shake it until the snow is level with the cup and then transfer it to the plastic baggie. Attach the bag to the field scale to weigh it. *Be sure to subtract the weight of the bag before you use the weight of the snow to calculate the snow water equivalent (SWE).*

Calculating (SWE)
Use the field scale to measure the weight of the baggie used to weight the snow sample, 2.5 grams, for example. Take the weight of the snow and the baggie and subtract the weight of the baggie. So if the total for both was 21 grams.

21 g – 2.5 g = 18.5 grams

We need to find the density:

$$\text{Density} = \frac{\text{Mass(g)}}{\text{Volume(cm}^3\text{)}}$$

The volume is the same for each sample and is the volume in cubic centimeters of the sampling container (2 oz). That amount is 59 mL (remember 1 milliliter = 1 cubic centimeter). *The volume amount under the mass is going to be 59 cm³ for each density equation.*

$$\text{r} = \frac{18.5\ \text{g}}{59\ \text{cm}^3} = 0.31\ \text{g/cm}^3$$

Then use the following equation to find the SWE

$$\text{SWE} = \frac{\text{depth(cm)} \times \text{density(g/cm}^3\text{)}}{\text{density of water} = 1\ \text{g/cm}^3}$$

The density of water is 1, but it is important in the equation because we want to get the amount of water in each sample in a measure of centimeters.

Example:

$$\text{SWE} = \frac{5\text{cm} \times 0.31\ \text{g/cm}^3}{1\ \text{g/cm}^3} =$$

$$\frac{5\text{cm}}{1} \times \frac{0.31\text{g}}{\text{cm}^3} = 1.55\ \text{g/cm}^2 \div 1\ \text{g/cm}^3 =$$

$$\frac{1.55\ \text{g/cm}^2}{1\ \text{g/cm}^3} = 1.55\ \text{cm of water}$$