

**The Regolith and Sedimentary Particles Particle Size Analysis**

Complete the table by answering the following questions.

Particle size (>mm)	phi particle size	weight (gm)	weight %
2.38		9	
2		1.6	
1		6.5	
0.5		15.8	
0.25		97.53	
0.149		64	
0.063		21.6	
<0.063		3.1	
total weight	N/A		N/A

1.
  - a. Determine the phi particle size for each size separate and include this value in the table. By using the following equation:  
***phi (φ) particle size = -log<sub>2</sub>(grain diameter in mm)***  
 Use figure 4 in the lab narrative
  - b. Determine the total initial weight of the sample and calculate the weight % of each size separate.
  - c. Plot a histogram (with eight little columns for each “>\_mm” size fraction) on the 10x10 plotting paper.
  - d. Now plot a cumulative frequency curve for the sample on the same plotting paper (see figure 6, lab narrative).
  - e. What is a qualitative estimate of the sorting for this sample? (The narrower your cumulative frequency curve the better the sorting!!)  
 Sorting Verbal description \_\_\_\_\_

2. Describe the grain shape for each of the samples from four little boxes in the table below
- a. What is the relationship between particle size and grain shape? Can you explain this?

Box #	Particle size (mm) 1, 2, 3, 4	Grain Shape			
		1	2	3	4
1	2, 1, 0.5, 0.25				
2	2, 1, 0.5, 0.25				
3	2, 1, 0.5, 0.25				
4	2, 1, 0.5, 0.25				

- b. What methodology would you recommend for the description of particle shape given the relationships you have observed in thee samples?

