Investigating Impact Craters Worksheet

Data Tables

Table A: Density of Impactor

Drop height: _____ cm   Volume:_____ cm^3

1.9-cm Spheres			Crater Diameter (cm)				Crater Depth (cm)			
Material	Mass (g)	Density (g/cm^3)	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
Polystyrene										
Glass										
Steel										

Table B: Diameter of Impactor

Drop height: _____ cm

Steel Spheres		Crater Diameter (cm)				Crater Depth (cm)			
Diameter	Mass (g)	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
1.3 cm									
1.6 cm									
1.9 cm									

Table C: Velocity of Impactor

Mass: _____ g

1.9-cm Steel Sphere	Crater Diameter (cm)				Crater Depth (cm)			
Drop Height (cm)	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
30								
45								
60								

Post-Lab Questions and Calculations *(Answer on a separate sheet of paper.)*

1. Calculate the average crater diameter and depth for each test and record the respective averages in the data tables above.

2. In general, how does the diameter of the crater compare to the diameter of the impactor?

3. What was the effect of the density of the impactor on the size of the crater?

4. Find two spheres of similar mass but different diameters and compare their results.
   a. Does the mass or the diameter of the impactor seem to have a greater effect on the diameter and depth of the crater?
   b. Explain your answer to 4*a* in terms of kinetic energy.

5. Compare and contrast features of the experimental impact craters to actual impact craters.