Name_

FLINN SCIENTIFIC

Investigating Impact Craters Worksheet

Data Tables

Table A: Density of Impactor

Drop height: _____ cm Volume: _____ cm³

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 4a in terms of kinetic energy.
- 5. Compare and contrast features of the experimental impact craters to actual impact craters.

© 2019, Flinn Scientific, Inc. All Rights Reserved. Reproduction permission is granted from Flinn Scientific, Inc. Batavia, Illinois, U.S.A. No part of this material may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to photocopy, recording, or any information storage and retrieval system, without permission in writing from Flinn Scientific, Inc.