

## Activity #5: Solar System Collisions

Please go to the web site: <http://janus.astro.umd.edu/astro/impact/>

You will investigate collisions on Mars and the Moon. Read the questions below and construct a table to gather the necessary data. (Activities 1-4 include sample tables.)

Use projectile diameters of 1 meter, 100 meters, and 0.5 kilometers in your data table. Keep the velocity constant at 20 km/sec. Vary the composition.

5-1. Two types of craters form. Describe their appearances. What causes these differences? (You can click under the crater photos for more information.)

5-2. How does projectile diameter influence the crater type? Offer a hypothesis to explain what happens.

5-3. A crater doesn't occur in all cases. Which case(s) is/are different? What conditions on Mars and the Moon account for the differences? Explain.

5-4. Examine the differences in frequency of occurrence for a collision with a projectile of rocky composition. For equal diameter projectiles which body is more likely to be hit? Explain why.

5-5. How does projectile composition affect frequency of occurrence? Account for any differences.

5-6. Examine crater depths and diameters. Is it harder to make a crater on Mars or the Moon? Explain your answer.