Mud Splat Craters

Objective: To observe crater formation and to identify the distinctive features of impact sites.

National Science Education Standards:

Standard A: Abilities necessary to do scientific inquiry

Standard F: Natural hazards

Background: What does a crater look like? What happens to a planet's surface during an impact? What are the features created during an impact? (*Note:* This activity should be done outside or in an area where the floor can be covered with plastic sheeting.) Many features can affect the size and shape of an impact crater (i.e. size of impactor, angle of impactor, type of soil or rock at impact…). Students can explore some of these factors by changing the amount of mud, the amount of water in the mud, the "planet surface", or even trying different impact velocities.

Materials:

- Large tub or pan. Plastic dishpans or a double layer foil-roasting pan will work best.
- Fairly clean dirt
- Large spoons to mix the mud
- Broom and dustpan
- Aprons or men's old front button shirts (to protect clothes)
- Water pitcher
- Sturdy plastic spoons for students
- Handout
- Babywipes or paper towels to clean mud off skin

Procedure: Mix the mud ahead of time, not making it too soupy. Make a poster showing the different crater features or use the student handout. The objective is to take a spoonful of mud and fling it into the dishpan. The impact should create crater features. Have the students identify as many features as possible and list them on their handout.

Extension: Show students actual fluidized craters from the surface of Mars and introduce such topics as ground ice or possible underground water on Mars. The following is a link to actual fluidized craters:

http://www.msss.com/mars_images/moc

Name:

MUD SPLAT CRATERS!

Procedure:

1. Scoop a spoonful of mud out of the box.
2. Carefully fling the mud back into the box.
3. Repeat this five times and draw your favorite crater below.

Observations/Conclusions:

1. Draw your best crater, labeling the different features.

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2. What are the features of the “perfect” crater?

    1)

    2)

    3)

    4)

    5)

    6)

3. What are two reasons impact craters could look different?

    1)

    2)

Illustration 1: This diagram shows the stages of an impact of a crater. Used by permission of CRATERS! by William K. Hartman with Joe Cain.

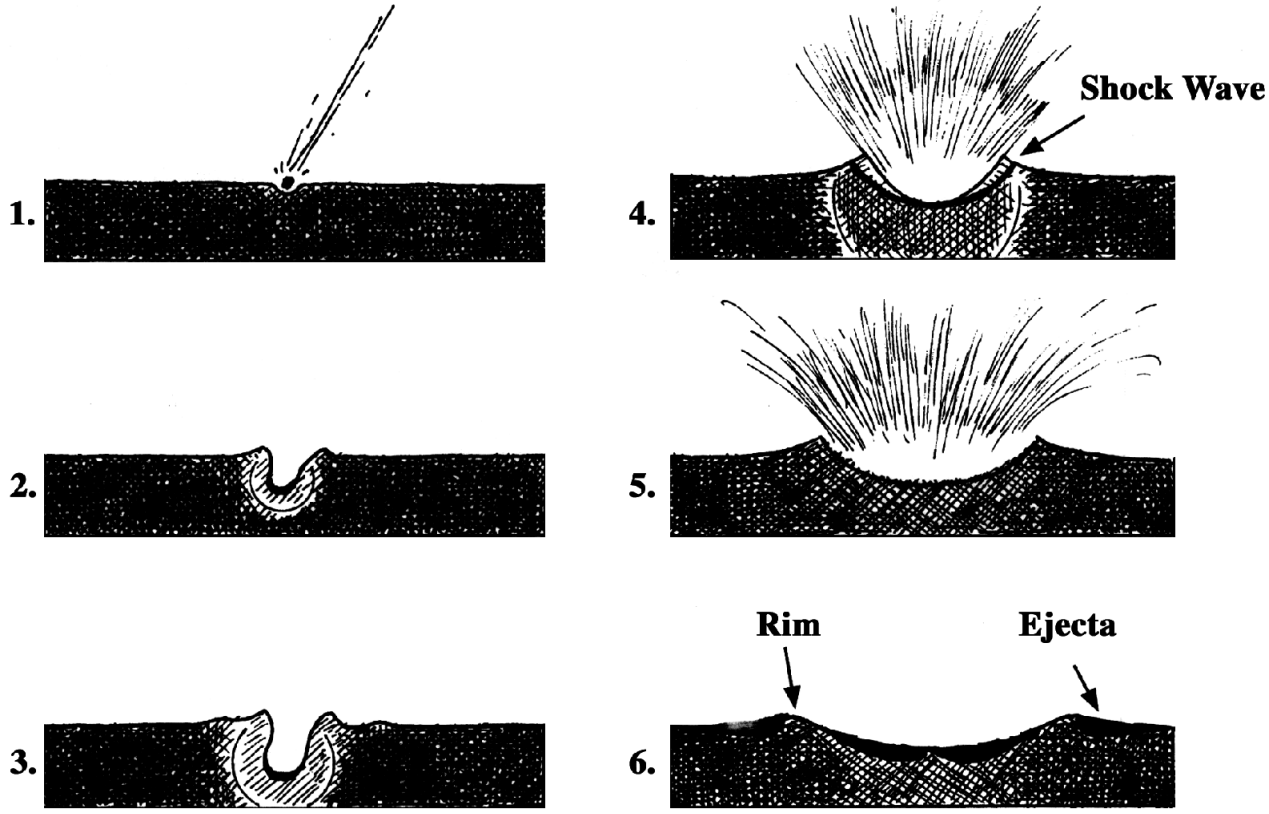

Illustration 2: This diagram shows the features created by an impact crater. Used by permission of CRATERS! by William K. Hartman with Joe Cain.