

**The title of this Student Text is
“Excavation and Modification Phases of
Cratering”**

The image in Tactile Card 9e shows the pre-excavation phase.

This is also called the early excavation stage because crater excavation begins.

Start your observation by finding the dashed line in the center of the land, the dotted region. The dashed line represents the impact area. Track the shape of this line. It forms a part of an oval.

Inside the dashed line impact area, find a solid line that represents the beginning of a crater. Track the shape of this solid line.

There are some arrows inside the crater area. Observe the direction in which the arrow heads point. Remember that arrows show the direction of energy transfer.

They are showing that the shock wave has rebounded and is traveling to the surface. The shock wave continues to travel outward through the target material, losing energy to the transformation of rocks as it travels outward.

Feel the void that projects up and to the right of the arrows.

During this stage, notice that the atmosphere fills in the trail behind the projectile.

When you have completed your observations, record your responses to the following questions on your student sheet.

How is the void different in this image from that in the previous images?

What are some of the differences you can observe between this image and the previous images?

How has the transfer of energy changed?