

## Lesson Outline continued

3. The material at the center of the rotating disk became a star that we call the Sun.

4. The remaining bits of material around the star formed planets, including Earth.

### E. Early Earth

1. As Earth grew, it heated up inside. Its rocks softened and began to flow.

2. Gravity pulled surface bumps toward Earth's center. Earth began to look like a sphere.

### F. The Formation of Earth's Layers

1. Thermal heat inside Earth melted some of the materials that formed Earth.

2. These liquid materials were able to move, or flow, and form layers.

3. Earth's layers formed because of differences in density of the materials.

a. Density is a measure of the mass of a material per unit of volume. The denser a material is, the more mass it has per unit volume.

b. The force of gravity caused denser materials to sink toward the center of Earth.

c. The least dense materials stayed at the surface of the planet.

d. The materials that had intermediate density formed the middle layer of Earth.

## Discussion Question

How did gravity influence the formation of the solar system and the shape and structure of Earth?

Gravity causes the formation of all the different bodies in the solar system, including the Sun and the planets. It caused the most massive body—the Sun—to form at the center of the solar system. Gravity causes most of the bodies in the solar system to take a spherical shape by pulling the mass of each body uniformly toward the center of the body. Gravity also causes satellites, such as the Moon, to orbit the planet they are closest to.