Energy flows through the Sun’s layers.

Although the Sun is made entirely of gas, it does have a structure. Energy produced in the center of the Sun flows out through the Sun’s layers in different forms, including visible light.

The Sun’s Interior

The Sun’s interior generally becomes cooler and less dense as you move away from the center.

1. Core  The center of the Sun, called the core, is made of very dense gas. Temperatures reach about 15 million degrees Celsius. Under these extreme conditions, some hydrogen particles collide and combine to form helium in a process called fusion. The process releases energy that travels through the core by radiation.

2. Radiative Zone  Energy from the core moves by radiation through a thick layer called the radiative zone. Although this layer is very hot and dense, conditions in the radiative zone are not extreme enough for fusion to occur.

3. Convection Zone  In the convection zone, energy moves mainly by convection. Convection is the transfer of energy from place to place by the motion of heated gas or liquid. Rising currents of hot gas in the convection zone carry energy toward the Sun’s surface.

Where does the Sun’s energy come from?

The Sun’s Atmosphere

The Sun’s outer layers are called its atmosphere. These layers are much less dense than the interior. The atmosphere generally becomes hotter and less dense as you move outward.

4. Photosphere  Visible light moves by radiation out into space from the photosphere. It takes about eight minutes for the light to reach Earth. Since the photosphere is the layer you see in photographs of the Sun, it is often called the Sun’s surface. Convection currents beneath the photosphere cause it to have a bumpy texture.

5. Chromosphere  The chromosphere is the thin middle layer of the Sun’s atmosphere. It gives off a pinkish light.

6. Corona  The Sun’s outermost layer is called the corona. The corona, which varies in shape, extends outward several million kilometers. Both the chromosphere and the corona are much hotter than the photosphere. However, they have such low densities that you can see their light only during a total eclipse of the Sun, when the Moon blocks the much brighter light from the photosphere.