

<p>The Sun</p>	<p>28.1 Structure of the Sun</p> <ul style="list-style-type: none"> ■ Made of 70% hydrogen ■ 28% helium ■ 2% everything else (metals, carbon, etc.) ■ 3 basic layers: <ul style="list-style-type: none"> - The core - Inner zones - Atmosphere
<p>The Core</p>	<ul style="list-style-type: none"> ■ At the center of the sun is the core. ■ The core makes up 25% of the sun's total diameter of 1,390,000 km. ■ The temperature of the core is about 15,000,000 °C. ■ The core is made up entirely of ionized gas, and is 10 times as dense as iron.
<p>Hydrogen Fusion</p>	<p>**Draw image from the Powerpoint**</p>
<p>Mass Into Energy</p>	<ul style="list-style-type: none"> ■ One of the final products of the fusion of hydrogen in the sun is always a helium nucleus. ■ The helium nucleus has about 0.7% less mass than the hydrogen nuclei that combined to form it do. The lost mass is converted into energy during the series of fusion reactions that forms helium. ■ The energy released during the three steps of nuclear fusion causes the sun to shine and gives the sun its high temperature.
<p>Radiative Zone</p>	<p>radiative zone the zone of the sun's interior that is between the core and the convective zone and in which energy moves by radiation</p> <ul style="list-style-type: none"> ■ The radiative zone of the sun surrounds the core. ■ The temperature of the radiative zone ranges from about 2,000,000°C to 7,000,000 °C . ■ In the radiative zone, energy moves outward in the form of electromagnetic waves, or radiation.
<p>Convective Zone</p>	<p>Convective zone the region of the sun's interior that is between the radiative zone and the photosphere and in which energy is carried upward by convection</p> <ul style="list-style-type: none"> ■ The convective zone surrounds the radiative zone. The temperature of the convective zone is about 2,000,000°C. ■ Energy produced in the core moves through this zone by <i>convection</i>. ■ <i>Convection</i> is the transfer of energy by moving liquids or gases. ■ The Sun's Atmosphere ■ The sun's atmosphere surrounds the convective zone of the sun's core. ■ The sun's atmosphere has three layers: the photosphere, the chromosphere, and the corona.

<p>Photosphere</p>	<p>photosphere the visible surface of the sun</p> <ul style="list-style-type: none">■ <i>Photosphere</i> means “sphere of light.” The photosphere of the sun is the innermost layer of the sun’s atmosphere.■ The photosphere is made of gases that have risen from the convective zone. The temperature in the photosphere is about 6,000°C.■ Much of the energy given off from the photosphere is in the form of visible light.
<p>Chromosphere</p>	<p>chromosphere the thin layer of the sun that is just above the photosphere and that glows a reddish color during eclipses</p> <ul style="list-style-type: none">■ The chromosphere lies just above the photosphere. The chromosphere’s temperature ranges from 4,000°C to 50,000 °C.
<p>Corona</p>	<p>corona the outermost layer of the sun’s atmosphere</p> <ul style="list-style-type: none">■ The corona is a huge region of gas that has a temperature above 1,000,000°C.■ As the corona expands, electrons and electrically charged particles called <i>ions</i> stream out into space.■ These particles make up <i>solar wind</i>, which flows outward from the sun to the rest of the solar system.