

**Year 6**

**Ocean Literacy Principle**

**Concepts**

<p><b>Biological sciences:</b> The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)</p>	<p>The ocean supports a great diversity of life and ecosystems</p>	<p>The ocean provides a vast living space with diverse and unique ecosystems from the surface through the water column and down to, and below, the seafloor. Most of the living space on Earth is in the ocean.</p> <p>Ocean ecosystems are defined by environmental factors and the community of organisms living there. Ocean life is not evenly distributed through time or space due to differences in abiotic factors such as oxygen, salinity, temperature, pH, light, nutrients, pressure, substrate, and circulation. A few regions of the ocean support the most abundant life on Earth, while most of the ocean does not support much life.</p> <p>There are deep ocean ecosystems that are independent of energy from sunlight and photosynthetic organisms. Hydrothermal vents, submarine hot springs, and methane cold seeps, rely only on chemical energy and chemosynthetic organisms to support life.</p> <p>Tides, waves, predation, substrate, and/or other factors cause vertical zonation patterns along the coast; density, pressure, and light levels cause vertical zonation patterns in the open ocean. Zonation patterns influence organisms' distribution and diversity.</p> <p>Estuaries provide important and productive nursery areas for many marine and aquatic species.</p>
<p><b>Earth and space sciences:</b> Sudden geological changes and extreme weather events can affect Earth's surface (ACSSU096)</p>	<p>The ocean and humans are inextricably interconnected</p>	<p>Much of the world's population lives in coastal areas. Coastal regions are susceptible to natural hazards (tsunamis, hurricanes, cyclones, sea level change, and storm surges).</p>
<p><b>Chemical sciences:</b> Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting (ACSSU095)</p>	<p>The ocean is a major influence on weather and climate.</p>	<p>Condensation of water that evaporated from warm seas provides the energy for hurricanes and cyclones. Most rain that falls on land originally evaporated from the tropical ocean.</p>
<p><b>Use and influence of science:</b> Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083) &amp; (ACSHE100)</p>	<p>The ocean and humans are inextricably interconnected</p>	<p>Humans affect the ocean in a variety of ways. Laws, regulations, and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (point source, nonpoint source, and noise pollution), changes to ocean chemistry (ocean acidification), and physical modifications (changes to beaches, shores, and rivers). In addition, humans have removed most of the large vertebrates from the ocean.</p> <p>Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.</p>