





1.5 Requirements for life

No organism can live without the lithosphere, hydrosphere or atmosphere. We will now look at how plants and animals need each of these spheres to survive.

Lithosphere	
Plants need the lithosphere	Animals need the lithosphere
<p>Plants grow in the soil and need the soil for the following reasons:</p> <ul style="list-style-type: none"> Plants need mineral salts from the soil to stay healthy and be able to produce chloroplasts in order to photosynthesise. Plants are anchored in the soil by their roots so they can remain steady. Plants absorb water through their roots in the soil. Seeds germinate in the soil so plants can reproduce. 	<p>Animals need soil for the following reasons:</p> <ul style="list-style-type: none"> All herbivores are dependent on plants that grow in the soil for their food. Animals all need mineral salts that come out of the soil to be healthy. Examples of these minerals: iron, magnesium, sodium, phosphorus and sulfur. Animals get these minerals through their food, or it is found in their drinking water. Many animals are dependent on soil for a habitat (home) in which they live. Examples of such animals are meerkats, rabbits, earthworms and moles. 
Hydrosphere	
Plants need the hydrosphere	Animals need the hydrosphere
<p>Plants need water for the following reasons:</p> <ul style="list-style-type: none"> Water is required for the process of photosynthesis. Water serves as medium of transport and is solvent in plants. Water supplies stability and structure to plants. Water is required for a variety of chemical reactions that take place in plants. Many plants live in or under the water. Many plants need water to spread their pollen or seeds so they can reproduce. 	<p>Animals need water for the following reasons:</p> <ul style="list-style-type: none"> Water serves as a solvent in animals' bodies. Nutrients and gases required for life dissolve in the water in animal bodies so it can be transported through the body. Water is necessary for many chemical reactions that take place in animal bodies. Water is a habitat in which many animals live. Animals, like frogs and fish, need water to reproduce.



Hydrosphere

Plants need the hydrosphere



Animals need the hydrosphere

- Humans use water as a cleaning agent and for recreation.
- Water also makes up a part of some animals' hydrostatic skeletons, like earthworms and jelly fish, and therefore gives stability to these animals' bodies.



Atmosphere

Plants need the atmosphere

Plants need air for the following reasons:

- Plants absorb oxygen from the air when they respire (release energy).
- Plants absorb carbon dioxide (CO₂) from the air when they photosynthesise.
- Plants need the air so their pollen and seeds can be distributed for reproduction.

The seeds of the dandelion are spread by the wind.



Animals need the atmosphere

Animals need air for the following reasons:

- All animals are dependent on the oxygen they breathe so they can respire and produce energy.
- Birds and insects fly through the air to get from one place to another.
- Humans use the air for aeroplanes, hot air balloons, kites, etc.

