GENERAL SCIENCE

Plant Growth and Responses

NOTES

To grow and be healthy every living thing needs certain things from its environment. Plants need **light**, **water, oxygen, carbon dioxide, minerals, proper temperature** and **enough space** in which to grow.

Different plants have different growth patterns. **Trees**, **vines** and **shrubs** grow differently.

- A **tree** is a plant that has one main woody stem or truck.
- A **shrub** is usually a middle sized plant that has many stems or trunks.
- A **vine** is a plant with a climbing stem that may grow on the sides of a building, fence or a tree.



tree

shrub

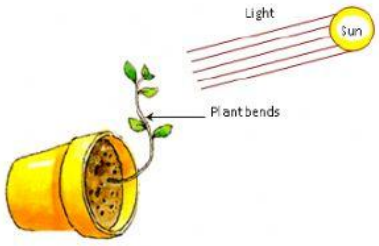


vine



Growth-rate is also different for the different plant types. Some plants grow only during the **wet seasons**. Others grow **all year round**. Growth-rate also can be controlled by changes in the environment.

Like all living things, **plants respond to things in the environment**. Plants respond to a variety of things (**stimuli**) such as **light**, **gravity** and **water**. A plant's response that involves growth is a "**tropism**". Plants bend towards light as they grow.



The growth response of a plant to light is called "**phototropism**".

Responses to **gravity** and **water** also help plants survive.

A **stem** responds to gravity by growing in the direction opposite to the pull of gravity. When stems grow upward, leaves can get light. **Roots** respond to gravity by growing in the direction of the pull of gravity. The downward growth of roots helps the roots reach water in the ground. Roots also respond by growing towards the water itself. A plant's response to gravity is called "**gravitropism**".



Adaptations In Plants

PLANT ADAPTATIONS



VOCABULARY

adaptation: a special skill which helps a plant or animal to survive an do everything it needs to do.

Plants that live in different environments have different **adaptations**.



Pine trees

Pine trees grow where there is little rainfall. Pine trees have needle like leaves. These leaves have a small surface area. So pine trees do not lose much water through their leaves.

Cactus

The **cactus** plant has **long roots** that spread out just below the surface. They can absorb water quickly after it rains. The **thick stems** of the cactus **store the water** that is used during the long, dry spells.





Locoweed

Some wild plants, like **locoweed**, produce **poisons** to prevent animals from eating the leaves. This prevents the growth of young plants. New plants do not grow around that tree. This poison is an adaptation because there are no new plants to compete with the tree for space. Some leaves are covered with wax to prevent water loss.

