

Sample Literature Review

The topic of my research project is plants. In this literature review, I will discuss the parts of the plant and some important plant processes. I will also describe how a plant grows from a seed. In addition, I will discuss the needs of plants and describe the soil in which they grow.

There are three main parts of the plant that help it to survive. These parts are the roots, stems and leaves. The roots have two important jobs to do. First, they anchor the plant in the soil. Second, they allow water and nutrients to pass from the soil into the plant. The root contains two important tissues that help to transport materials through the plant. These tissues are called xylem and phloem.

The xylem and phloem tissues are like tubes that run through the plant. Xylem tissue transports water and nutrients up from the roots and carries it to all parts of the plant. Phloem tissue transports sugars from the leaves down to the roots for storage.

The stem is the second main part of the plant. The stem has two jobs to do. It provides support for the leaves. The stem helps raise the leaves up into the sunlight. It also contains the xylem and phloem tissues just like the root.

The last main plant part are the leaves. The leaves contain a substance called chlorophyll which is responsible for capturing the Sun's energy. The chlorophyll is what gives the leaves and stem their green color. The plant will use the energy the chlorophyll takes in to make its own food in a process called photosynthesis.

Photosynthesis is the food-making process of all plants. In this process, the plant uses water, carbon dioxide (CO₂) and the energy from the Sun to create sugars and oxygen (O₂). The plant takes in the water from its roots, the carbon dioxide from the air and captures the Sun's energy using the chlorophyll.

The plant will use some of the sugar that it created in photosynthesis. It will burn the sugars to get energy in a process called respiration. In this process, the plant takes oxygen and sugars and combines them to release energy and the waste products carbon dioxide and water. Any sugars that the plant does not need for energy will be stored in its root, or stem or leaves.

All plants grow from a seed. When a seed begins to grow into a plant we call this process germination. A seed contains the embryo of a new plant as well as a food supply to help the seed survive until it can do photosynthesis. The outside of the seed is called the testa or seed coat. The seed also has cotyledons or seed leafs.

If the seed has one cotyledon it is called a monocot. If it has two cotyledons it is called a dicot. At the beginning of germination, the seed leaves absorb water and swell. The radicle comes out of the seed. This will become the root of the plant. The plumule also comes out of the seed. This is also called the shoot. The shoot or plumule will grow into the plant stem and leaves.

Plants are like humans, if they don't get the things they need they won't grow. The four main things that a plant needs are sunlight, water, soil and climate. A plant needs sunlight and water to carry out the process of photosynthesis. Climate includes the average temperature and rainfall in the area where a plant grows. Finally a plant needs soil in which to grow.

Soil is made up of weathered rock and decayed plant matter. It has many layers which are called horizons. Horizon A is the upper layer of soil. It is often called topsoil. Humus is the nutrient rich part of Horizon A. It is the part of the soil that gives plants the nutrients they need. The other soil horizons are called B and C. Horizon B is partly weathered rock and Horizon C is called the bedrock. These two horizons really have no effect on plant growth. The materials that are found in soil are important for plants and can have an effect on their survival.

In this research project, I learned a lot about plants. I learned the main parts of the plant and the functions that they do for the plant's survival. I also learned about the things that a plant needs to grow and stay healthy. Finally, I learned about the growth of a plant from a seed. I enjoyed learning about plants for this science fair project. Now that I know this information I will be able to be a better gardener. I am looking forward to learning more about plants in the future.