

# S.O.S. Structure and Function of Plants

TN Science Standards Addressed:

3.LS1: From Molecules to Organisms: Structures and Processes: Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.

3.LS4: Biological Change: Unity and Diversity: Infer that plant and animal adaptations help them survive in land and aquatic biomes.

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Key vocabulary:

adaptation: a structure or behavior that helps an organism survive in its environment

cone: a plant structure where seeds are made in some nonflowering plants

photosynthesis: the process through which plants make food; takes place in the leaves of the plants

stomata: pores in the bottom of leaves that open and close to let in carbon dioxide or let out oxygen and water vapor; without stomata, water and oxygen leaving the plant would not be regulated

stimulus: something in the environment that causes a living thing to respond

response: a reaction to a stimulus

respiration: the using and releasing of energy in a cell; plants get carbon dioxide from the air

transpiration: the release of water vapor through the stomata of a plant; water travels from the roots, up the stem, to the leaves during transpiration

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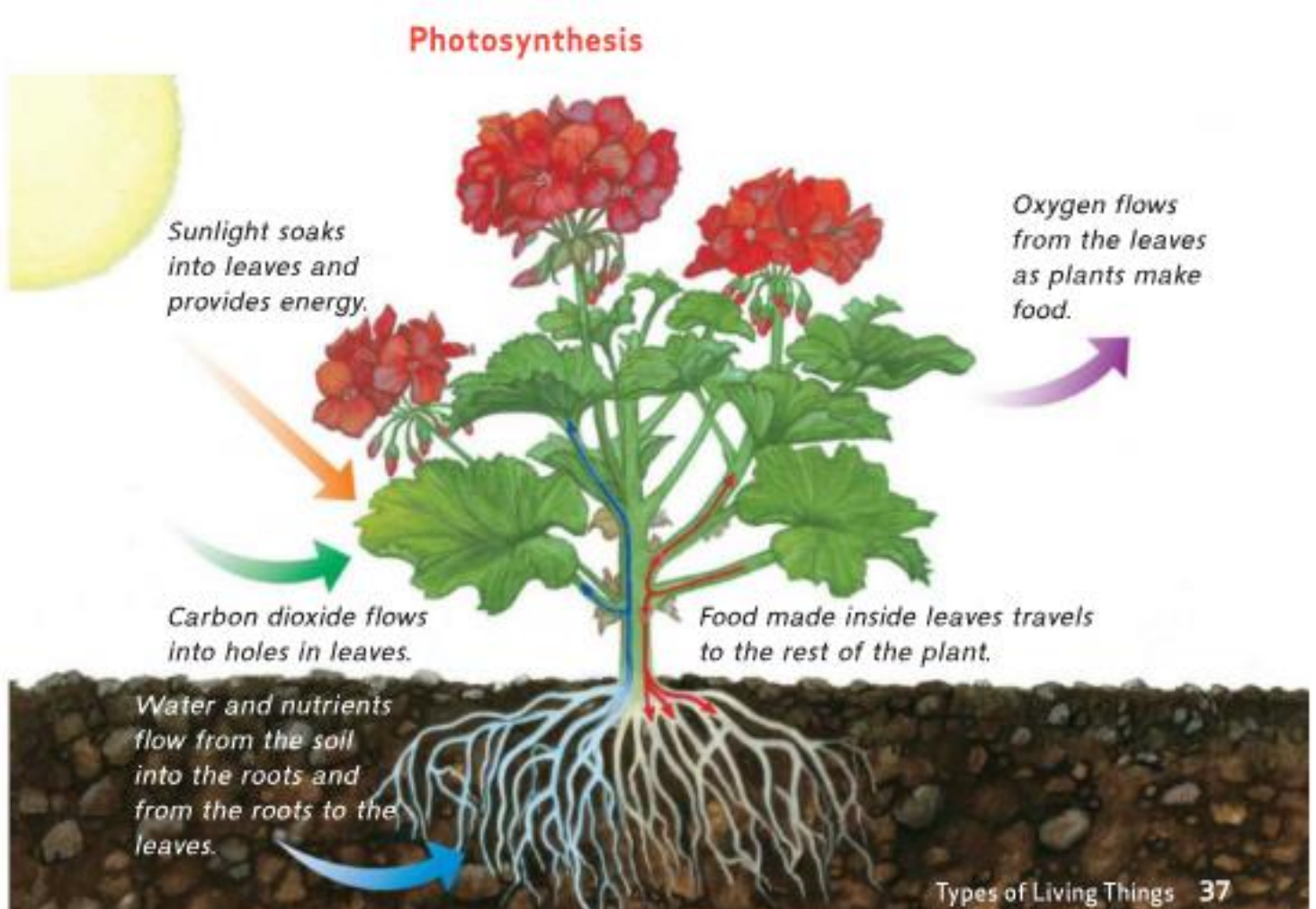
## Functions of Plant Parts:

**roots**: Roots take up water and nutrients from the ground. They also keep plants firmly in the soil. Some roots even store food.

**stems**: A plant's stem grows above the ground. The stem moves food, water, and nutrients throughout the plant. Stems also hold the plant upright so it does not fall over. There are two kinds of stems.

**leaves**: Most plants use leaves to collect light energy from the sun. Sunlight is combined with carbon dioxide to make food for a plant in the form of sugars. This process is called photosynthesis.

adaptations: Plants rely on structures to help them survive. These structures, like roots, stems, and leaves are adaptations. An adaptation is a trait that helps a living thing survive in its environment.



To make food, plants need carbon dioxide from the air, water, and energy from sunlight. To capture the energy from sunlight, leaves cells have chlorophyll, which is also what makes leaves green. Plants use air, water, and sunlight to change carbon dioxide and water into sugar and oxygen. The sugar is the plant's food. Sugars give plants the energy they need to live and grow. When other organisms eat plants, they get the energy that the plants have made. Plants release the oxygen they do not use to break down the food they have made back into the air. Most organisms, including people, need oxygen to live. We inhale oxygen every time we breathe. Most of Earth's oxygen is made through photosynthesis.