



Grade 5 Life Science: Transport Systems in Animals and Plants
 Introduction and Conceptual Flow Narrative
 *SCIENCE MATTERS



Organisms have structures to transport materials they need to survive.

A system is the interaction of various components (parts) to perform a function

Systems are made of parts with specific structures and functions

The parts of a system work together to perform the function of the system, which is different than the function of an individual part

Systems interact with each other to help an organism survive. Changes in one system impact other systems.

Plants have structures for transporting materials.

Plants have a system of tubes that transport water, minerals, nutrients, and gases

Plant structures for transport include roots, stems, leaves and tubes (xylem and phloem)

Photosynthesis is a process by which a plant makes nutrients that are transported in the plant.

In the process of photosynthesis, carbon dioxide and water are converted, in the presence of chlorophyll and sunlight, into sugar and oxygen.
 $CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$

Structures that help transport photosynthetic reactants and products include roots (H_2O); stomata (CO_2); phloem (sugar) and xylem (H_2O , nutrients).

Photosynthesis and cellular respiration are reverse processes.

Photosynthesis occurs only in plants in which sugar is made and oxygen is released.

Cellular respiration occurs in plants and animals in which food is converted to energy and carbon dioxide is released.