**Citation:** Plant Transport: Xylem and Phloem, Transpiration [3D Animation]

Transpiration Video Guide/Data Analysis  
**NAME: TEACHER GUIDE**

1. Why is transpiration important for plants?

Transpiration is the process that pulls water required for life processes from the roots up to the leaves.

1. What important chemical reaction occurs in the palisade mesophyll?

Photosynthesis occurs in the palisade mesophyll.

1. Why is the loose arrangement of cells in the spongy mesophyll important?

This loose arrangement leaves spaces which allow for gas and water exchange.

1. What are 2 functions of stomata?

Gases flow into the leaf and water vapor flows out of the leaf at the stomata.

1. Describe the vascular tissue xylem. What does xylem transport within the plant?

Xylem tissue is made from cells that are long tubes, like straws. Xylem transports water from the roots to the leaves.

1. What is adhesion? Cohesion? How do adhesion and cohesion allow water to flow in a continuous stream?

Adhesion is when water molecules stick to the sides of the Xylem, Cohesion is when water molecules stick to other water molecules. These two qualities allow water to be pulled up the Xylem in a continuous stream.

1. Why does water flow upward from the roots to the leaves?

Water evaporates from the leaves and exits out the stomata, this pulls water into the leaves and because of water cohesion, water is pulled up the xylem tissue.

1. What does the vascular tissue phloem transport and where are these compounds/molecules produced in a plant?

Phloem transports carbohydrates and amino acids produced in the leaves to the roots where they are stored.