CASE

Curriculum for Agricultural Science Education

Principles of Agricultural Science – Plant

Internal Parts and Function of Leaves

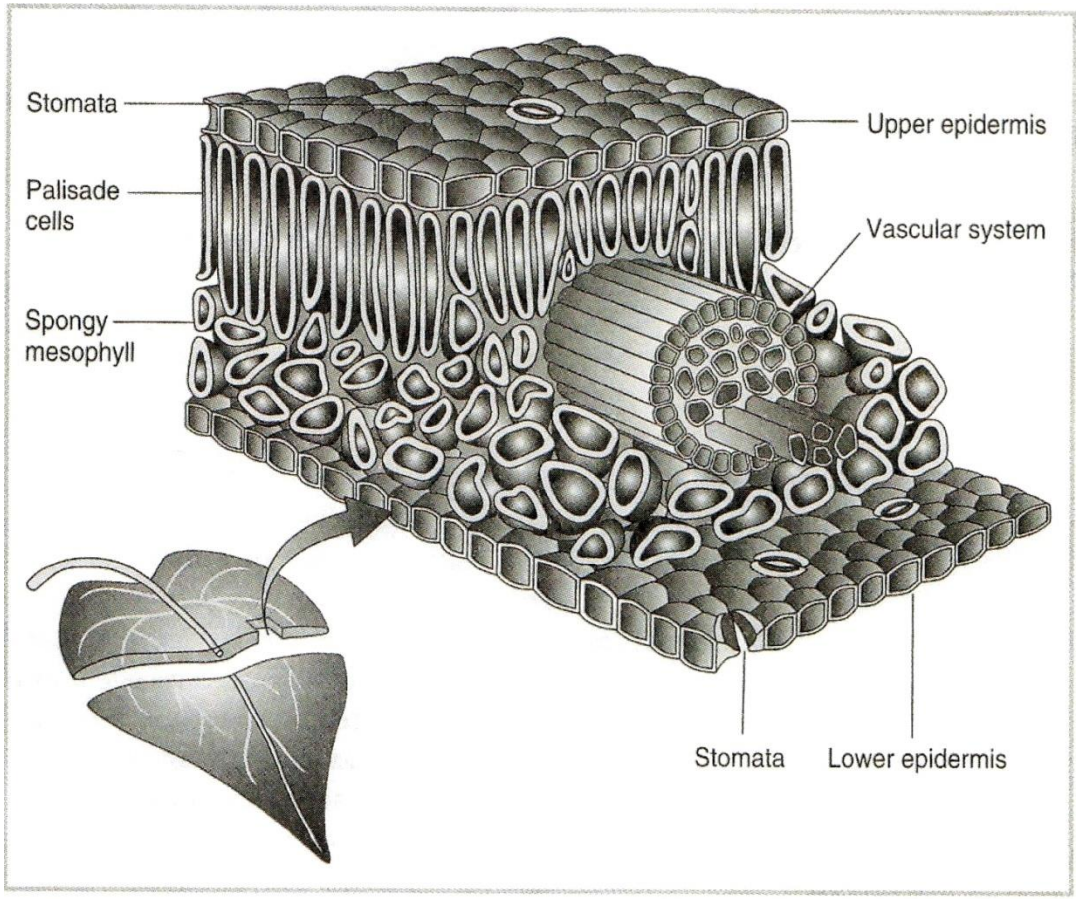
Unit 4 – Anatomy and Physiology
Lesson 4.4 Leave It to Leaves

What Leaves Do…

Major functions that leaves provide:

- Transpiration
- Photosynthesis
- Food storage

How the Leaf Does It…



Parker, 2004

Internal Parts

- **Epidermis**
  - Skin or barrier to prevent injury to leaf cells
- **Palisade cells**
  - Cells primarily responsible for photosynthesis
- **Spongy mesophyll**
  - Adds structure to leaf
- **Stomata**
  - Pores allowing the plant to breath
  - Stomata are used to cool the plant through the process of transpiration

Solar Panels

Leaves collect sun energy using chlorophyll found in plant cell organelles (chloroplasts)

Food Production

Plants use the energy from the sun to convert water and carbon dioxide into sugar (glucose), water, and oxygen.

Do you know what the process of making food in this manner is called?

Photosynthesis

Food Storage

Glucose produced during photosynthesis is stored in plant parts as an energy source to be available when needed.

In the leaf, glucose is converted to cellulose and stored in leaf cells.

Reference

Parker, R. (2004). *Introduction to plant science* (Rev. ed.). Clifton Park, NY: Delmar.

Parker, R. (2010). *Plant and soil science: Fundamentals and applications*. Clifton Park, NY: Delmar.