

## TEKS

- 5B** Examine specialized cells, including roots, stems, and leaves of plants; and animal cells such as blood, muscle, and epithelium
- 8B** Categorize organisms using a hierarchical classification system based on similarities and differences shared among groups
- 8C** Compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals
- 10B** Describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants
- 10C** Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system
- 11B** Investigate and analyze how organisms, populations, and communities respond to external factors
- 12B** Compare variations and adaptations of organisms in different ecosystems

## instructional content:

- ✦ Plant Classification
  - Nonvascular
  - Vascular
- ✦ Roots, Stems, and Leaves
  - Structure and function
  - Transport tissue
  - Gas exchange
- ✦ Reproduction
  - Asexual and sexual
  - Structure of flower
  - Seed dispersal mechanisms
- ✦ Response and Adaptations
  - Adaptations for photosynthesis
  - Adaptations for water absorption
  - Adaptations for food storage
  - Tropisms

## learning outcomes students will:

- Use all content and scientific process skills learned earlier in the course
- Describe the differences between angiosperms and gymnosperms
- Describe the main functions of roots, stems, and leaves
- Explain the purpose of root hairs
- Differentiate between taproot systems and fibrous root systems
- Describe the mechanisms and pathways for water and mineral uptake in roots
- Differentiate between the functions of xylem and phloem
- Identify the materials that are transported in xylem and phloem
- Compare and contrast herbaceous and woody stems
- Identify features of a stem
- Differentiate between simple and compound leaves
- Label and identify the function of the internal parts of a leaf
- Explain the role of turgor pressure
- Describe the process of transpiration
- Identify the role of the stomata and guard cells in gas exchange
- Describe the process of translocation in plants
- Describe methods of asexual reproduction in plants
- Label the structure of a flower and state the function of each part
- Define the term pollination and distinguish between the terms fertilization and seed dispersal
- Differentiate between self pollination and cross pollination
- Explain the purpose of a fruit
- List and describe four common methods of seed dispersal
- Describe environmental conditions necessary to initiate germination
- Recognize how plant hormones control plant growth
- Define tropism
- Identify three common types of tropisms
- Identify adaptations that help plants survive in various climates and environments



Incorporate scientific process skills during the instruction of all Biology concepts. Look for this icon at [wardsci.com/TEKS](http://wardsci.com/TEKS) for more information on scientific process skills.

## Recommended Ward's Science products with item numbers for easy online searching:

### science tools:

- [Boreal 2 Microscope - HM Advanced 242640](#)
- [Higher Plant Survey Jar Set 679703](#)
- [Lower Plant Survey Jar Set 679702](#)
- [Plant Kingdom Riker Mount Collection 671140](#)
- [Monocot and Dicot Roots \(wm\) f & fg 919905](#)
- [Monocot and Dicot Roots \(cs\) qs 919910](#)
- [Monocot Root Tip, Root Hairs \(wm\) qs 917010](#)
- [Monocot and Dicot Stems \(cs\) qs 919914](#)
- [Monocot and Dicot Leaves \(cs\) qs 919920](#)
- [Monocot and Dicot Leaf Epidermis \(wm\) fs & fg 919926](#)
- [Mixed Pollen, Twenty Types \(wm\) 917002](#)
- [Economy Stem Section Models 816181](#)
- [Dicot Flower Model 811130](#)

- [Elodea densa 867503](#)
- [Plant Mobile Center 6019319](#)
- [Light Kits for the Plant Mobile Center 6019304](#)
- [Growlab® Classroom Gardening Center 6617400](#)
- [Jiffy Planting Tray 6672608](#)
- [Dillan 6 Round Flower Pot Pk/10 6176406](#)
- [Electric Greenhouse 203150](#)
- [Ward's Why Cells Shrink and Swell Lab Activity 366207](#)
- [Mini Plant Press 100802](#)
- [Plant Press 100800](#)
- [Botanical Drier Sheets 204600](#)
- [Safe-T-Scalpels 140910](#)
- [Ward's Student Classroom Dissection Set 149997](#)

### instructional resources:

- [Wood Rounds Dendrology Set 630880](#)
- [Ward's Plant Growth and Life Cycle Lab Activity 368000](#)
- [Ward's Hydroponic Plant Study Lab Activity 361229](#)
- [Ward's Investigating Transpiration Lab Activity 366079](#)
- [Ward's Exploring Growth Movements in Plants Lab Activity 366066](#)
- [Ward's Seed Dispersal Lab Activity 366228](#)
- [Quantifying Plant Growth Regulators Lab Activity 207704](#)