21.3 Roots and Stems

KEY CONCEPT
Roots and stems form the support system of vascular plants.
21.3 Roots and Stems

Roots anchor plants and absorb mineral nutrients from soil.

- Roots provide many functions.
  - support the plant
  - absorb, transport, and store nutrients
  - root hairs help absorption
There are several parts of a root.
- root cap covers the tip
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  – root cap covers the tip
  – apical meristem is an area of growth
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- There are several parts of a root.
  - root cap covers the tip
  - apical meristem is an area of growth
  - vascular cylinder contains xylem and phloem
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- There are two main types of roots.
  - Fibrous root systems have fine branches.
  - Taproot systems have one main root.
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Stems support plants, transport materials, and provide storage.

- Stems have many functions.
  - support leaves and flowers
  - house most of the vascular system
  - store water
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- Stems have many functions.
  - support leaves and flowers
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  - store water
  - grow underground for storage

Ginger rhizomes

Potato tubers
Stems support plants, transport materials, and provide storage.

- Stems have many functions.
  - support leaves and flowers
  - house most of the vascular system
  - store water
  - grow underground for storage
  - form new plants
Some stems are herbaceous and conduct photosynthesis.
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- Some stems can be woody, and form protective bark.
• Primary growth increases a plant’s length.
• Secondary growth increases a plant’s width.
Tree rings help determine the age of a tree.