

Ch1 Growth and production of wood

Trees respire

Hardwoods (more complex, have vessels) versus softwoods

Wood is cellular

- Lumen

- Pits

- Closed ends (except for vessels)

Sap – nutrient or sugar-rich water

Rays – horizontal transport

Cambial meristem versus apical

- Lengthen and widen

- Carved initials test

- Fusiform (spindle) and ray initials

Periclinal (new xylem or phloem mother cells – which divide and expand) versus anticlinal (new initials) division

“Secondary xylem” is true wood

Days – time scale

Cambial zone – cambium and mother cells

- Living cells

Final cells are lignified and dead

Controlled by hormones (plant growth regulators)

- Begins at tips – IAA, gibberellin, and ethylene