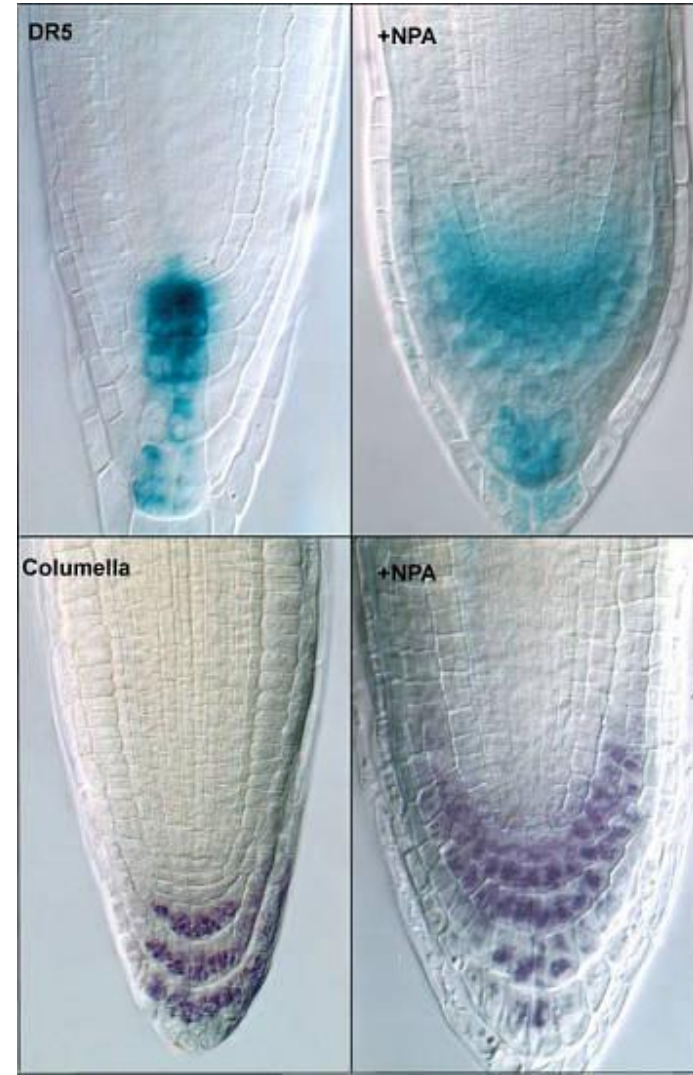


Plant Hormones & Plant Responses

Plant hormones regulate plant functions.

- Hormones are chemical messengers.
 - produced in one part of an organism
 - stimulates or suppresses activity in another part.



- Gibberellins are plant hormones that produce dramatic increases in size.

- ending seed dormancy
- rapid growth of young seedlings
- rapid growth of some flower stalks



- Ethylene causes the ripening of fruits.

- some fruits picked before they are ripe
- sprayed with ethylene to ripen when reach destination



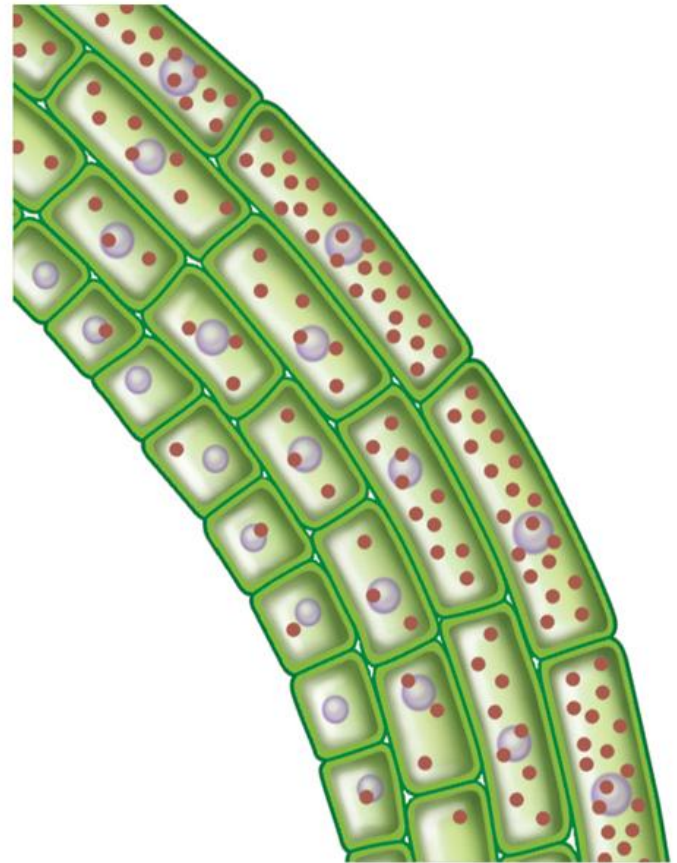
- Cytokinins stimulate cytokinesis.
 - final stage in cell division
 - produced in growing roots, seeds, and fruits
 - involved in growth of side branches



- Auxins lengthen plant cells in the growing tip.

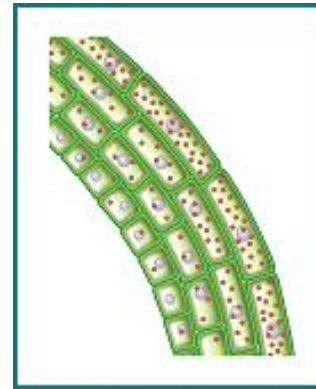
- stimulates growth of primary stem
- controls some forms of tropism

- A tropism is the movement of plant in response to an environmental stimulus.



Plants can respond to light, touch, gravity, and seasonal changes.

- Phototropism is the tendency of a plant to grow toward light.
 - auxins build up on shaded side of stem
 - cells on shaded side lengthen
 - causes stem to bend toward light



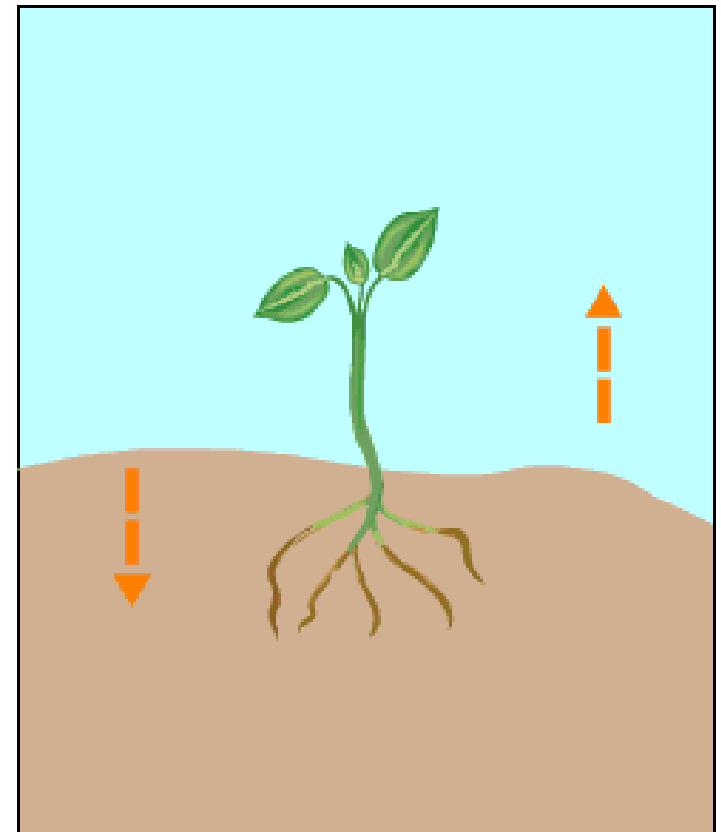
- Thigmotropism is a plant's response to touchlike stimuli.

- climbing plants and vines
- plants that grow in direction of constant wind



- Gravitropism is a plant's response to Earth's gravitational pull.

- positive gravitropism is downward growth (roots)
- negative gravitropism is upward growth (shoots)



- Some plants have rapid responses not involving growth.
 - Some responses protect plants from predators.
 - Some responses allow plants to capture food.



- **Photoperiodism** is a response to the changing lengths of day and night.

- triggers some plants to flower
- triggers fall colors/winter dormancy of deciduous trees

