Plant Hormones

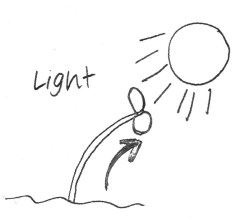
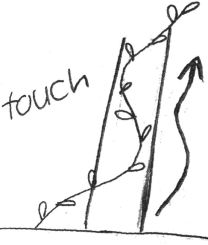
*Fill in the blank spaces with the appropriate definition or description of each.*

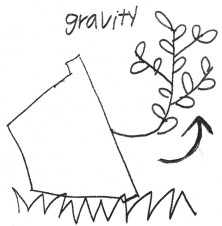
What is a plant HORMONE?

A naturally-occurring compound that causes change   
in physiology, *growth* or development in the plant.

1. \_\_\_AUXIN\_\_\_\_\_

|  |  |
| --- | --- |
| Role of Hormone | Cell elongation *(increase cell size)* |
| Site of Production | Shoot Tips |
| Effect of Hormone | Growth of plant in response to the environment, production of roots. |

  
Define and draw some examples of TROPISM:

Tropism: a plant’s response to environment

Phototropism- response to light

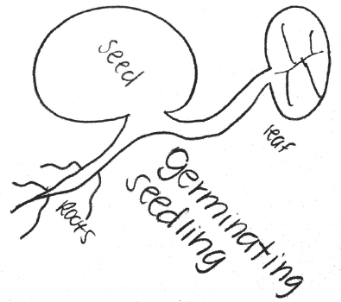
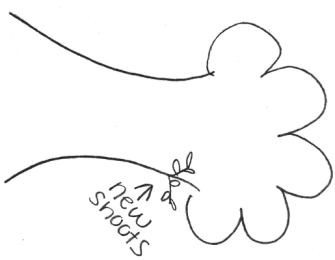
Geotropism-response to gravity

Thigmotropism-response to touch

1. \_\_\_CYTOKININ\_\_\_\_

|  |  |
| --- | --- |
| Role of Hormone | Cell division *(increase cell quantity)* |
| Site of Production | Root Tips |
| Effect of Hormone | Mitosis of new cells; stimulates seed germination and new shoot growth |

Draw some examples of how this hormone works:



1. \_\_\_\_GIBBERELLIN\_\_\_

|  |  |
| --- | --- |
| Role of Hormone | Internode elongation |
| Site of Production | Root and Shoot Tips |
| Effect of Hormone | Controls yearly cycles (flowering, seeding and dormancy exiting) rapid growth of stems and seeds. |

Describe how PHOTOPERIOD helps gibberellin in the plant control yearly cycles:

Photoperiod: a plant’s recognition of daylight length in a 24 hour period

As daylight increases in the spring, the plant recognizes a longer photoperiod. Gibberellin triggers the plant to exit dormancy.

1. \_\_\_\_ABSCISIC ACID\_\_\_\_\_\_

|  |  |
| --- | --- |
| Role of Hormone | Dormancy |
| Site of Production | Chloroplasts |
| Effect of Hormone | Enters dormancy: (leaves drop off of trees, seeds fall, stomatas close to reduce water loss) |

Describe how abscisic acid, in the plant, enters dormancy during times of drought:

*In times of water stress, the chloroplasts trigger stomatas to close to prevent loss of water during respiration.*

1. \_\_\_\_ETHYLENE\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Role of Hormone | Ripening and death |
| Site of Production | Ripening fruit, aging flowers, germinating seeds and wounded tissues |
| Effect of Hormone | Stimulates fruits to ripen, flowers to enter senescence (to grow old and die) |

Describe how ethylene can affect other plants:

Ethylene is in gas form and can diffuse and affect nearby plants.