

TROPISMS

Plant Hormone Lab Set Up
Plant Hormone Stations Results
Tropisms Notes & Videos

Lab Set Up – Plant Hormone Lab

- ▶ <https://www.youtube.com/watch?v=Kzk06EISvUs>
- ▶ (stop at 4 min)

Plant Hormone Stations Results



Station 1 – Auxin

- ▶ A– Longer stem
- ▶ B – Shorter stem

*Effect of Auxin: makes stems
grow taller*

Station 2 – Gibberillin

- ▶ A- fruit is smaller than the other
- ▶ B - fruit is larger than the other

*Effect of Gibberillin: increases
size of fruits*

Station 3 – Cytokinins

- ▶ A– dormant (inactive) seed
- ▶ B – germinating seed with root and shoot

Effect of Cytokinins: cause seed germination

Station 4 – Ethylene

- ▶ A– very ripe banana
- ▶ B – green banana

*Effect of Ethylene: causes fruit
to ripen*

Station 5 – Abscisic Acid

- ▶ A– stomata closed
- ▶ B – stomata open

Effect of Abscisic Acid: causes stomata to close

TROPISMS

Notes



Tropisms



A TROPISM IS A
PLANT'S DIRECTED
GROWTH TOWARDS OR
AWAY FROM A
STIMULUS.

Hormones



- **TROPISMS ARE CAUSED BY HORMONES.**
- **A HORMONE IS A SUBSTANCE PRODUCED IN ONE PART OF THE ORGANISM AND TRANSPORTED TO ANOTHER PART.**

TROPISMS

We will cover 4 tropisms.

Gravitropism

Phototropism

Thigmotropism

Hydrotropism

GRAVITROPISM

Gravitropism is a plant's movement and growth in response to **gravitational pull**.



The roots grow into the **soil** while the shoots grow in the opposite direction towards the light.



Plants use gravity for orientation



PHOTOTROPISM

Phototropism is a plant's growth response to **light**.



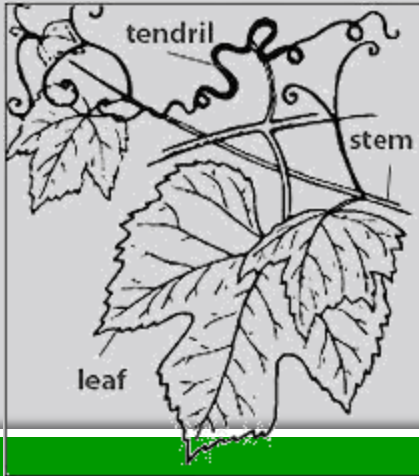
More sunlight energy means more **photosynthesis**.



Plants need light to grow.



THIGMOTROPISM



Thigmotropism is a plant's response and movement to physical contact.



For instance, climbing plants with coil-like structures (tendrils), first bend and turn until they touch a suitable supporting object, then they coil around it.

HYDROTROPISM

Hydrotropism is a plants growth response to water.

Roots, grow towards moist soils to avoid draught stress.

Once a root cap has sensed water it bends and then the root grows towards it.

Tropisms Videos

- »» Overview, Phototropism, Geotropism, Hydrotropism, Thigmotropism

Tropisms & Hormones Overview

- ▶ <https://www.youtube.com/watch?v=pCFstSMvAMI>

(3:02)

Phototropism

- ▶ Sunflowers Animation –
<https://www.youtube.com/watch?v=g8mr0R3ibPU> (2:05)
- ▶ Tomatoes Time Lapse
<https://www.youtube.com/watch?v=Ze8NV7cvW8k> (0:18)

Geotropism


- ▶ <https://youtu.be/5JXm1USHIQY?t=43s>
(<1 min, stop at 1:04 for geotropism;1:30 all)

Hydrotropism

- ▶ Animation (caution: kinda lame)

<https://www.youtube.com/watch?v=iidkVclZ5zI>

(0:28)



Thigmotropism

- ▶ Morning Glory tendrils: (start 0:10–1:15)
<https://youtu.be/yMHmU3eZsYk?t=10s>
- ▶ Spiraling seedlings (start at 0:20–1:00)
<https://youtu.be/H9MV5CgPglQ?t=20s>
- ▶ Venus Flytrap eats a snail (1:14)
<https://www.youtube.com/watch?v=qW34uFCz9jo>

Just For Fun

»» 10 Most DEADLY Plants on Earth!

<https://www.youtube.com/watch?v=BsL5nsEf56s>