

Root Hormone Lab

Chemicals known as auxins inform plants when to form roots. Rooting hormone products, which are commonly sold in powder, liquid, and gel form, contain natural auxins or synthetic compounds, which can be applied to clippings to stimulate root growth during propagation.

This exercise you will evaluate the rate at which plants produce roots using rooting hormone versus no rooting hormone.

What you need:

Rooting Hormone – such as rootone, take root, dip and grow, etc

Water

Plant that is easy to take stem cuttings from such as coleus – will need at least 2 cuttings per group

Small Plate or bowl

2 recycled 16 or 20oz soda/water bottles

Scissors / Knife

Permanent Marker

Follow the steps below:

1. Cut both your empty bottles in half so they are about 3-4 inches tall. Turn the top upside down and place it into the bottom half of the bottle so the mouthpiece is facing down (see picture to right).
2. Using your marker Label bottle 1 – **Water**, Label bottle 2 – **Hormone**
3. Select 2 fairly uniform stems from your Coleus plant. You want to cut the ends of the Coleus stems where the new growth has formed. Measure down just past the first node and made a cut. This should leave you with about 4-5 inches of stem, leaves at the terminal end of the stem, as well as leaves at the first node. (See picture to right)
4. Remove all the leaves from each stem EXCEPT the top 4 leaves. You can do this with your fingers, gently pinching off each leaf. Do this for both stems. (see picture to right)



Student Name _____



5. Place each cutting into the water bottle and make sure the stem IS NOT touching the bottom of the bottle. If it is, trim a small amount until there is about an inch between the stem and the bottom of the bottle. (see picture to right)
6. Take each cutting back out of the bottle and set aside.
7. Fill each bottle with water until it touches the mouthpiece
8. Pour a SMALL amount of rooting hormone into your plate or bowl. You only need a dime or nickel size amount!
9. Place cutting 1 directly into the bottle labeled water. Make sure the end of your stem is completely under water. DO NOT add any rooting hormone to this plant!
10. Roll the end of the stem on cutting 2 gently in the rooting hormone. Make sure to cover the entire bottom of the stem. Gently tap the stem against the side of the plate or bowl to knock off any excess rooting hormone. Place this stem into the bottle labeled hormone. Make sure the end of your stem is completely under water.
11. Clean up your station PLEASE! 😊

Student Name _____

Observations:

Name of Rooting Hormone Used _____

Activity Ingredient/ Auxin Listed _____

Record your observations of root growth in the chart below. Make sure to put the date at the top and your observations for that day below. Check your bottles at least every other day!

	Date	Date	Date	Date	Date	Date
Bottle 1 – Water						
Bottle 2 – Hormone						

Questions:

1. How many days did it take for each stem to start to produce roots?
 - a. Water only stem -
 - b. Rooting Hormone stems -
2. How did your results differ from your classmates?
3. What conclusions can you make from your results?
4. What are some other factors that affect how plants form roots?