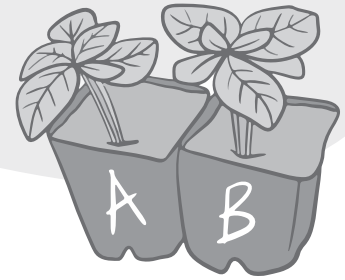


Why Pruning Basil Makes the Plant Bushy

Grades:

Time: 6 weeks



Lesson summary:

The Little Green Thumbs teacher's manual contains lots of reminders for you to prune basil plants. The natural growth of basil is tall and if not pruned, the plant will grow tall and leggy. Pruning causes the side shoots to grow and you end up with a fuller, bushier plant. In a LGT indoor garden this is important because a pruned basil plant fits better under the lighting, giving it more light for photosynthesis. Besides, a bushy plant looks good and produces more basil for your students to taste and sample!

Students will learn about this phenomenon by comparing two basil plants, one that is pruned and one that is left to grow naturally.

What's the big idea? ??

Why is it that those tiny side shoots on a basil stay small unless the plant is pruned? And why is it that a pruned basil plant grows side shoots and becomes bushy?

Outcomes or purpose:

- Students will learn that they can influence how a plant grows.

Teacher background:

This is an adaptation of some plants where the main shoot is dominant. Botanists call this apical dominance. Apical simply means tip – like the top of a mountain or the top shoot of a plant. We can think of the word dominant as meaning the boss. The boss gives orders and controls what others do. So, let's call the main shoot at the top of the plant "the boss".

In plants with apical dominance, the side shoots stay small. Why? Because a plant hormone called auxin flows down from the main shoot (the boss). Auxins stop other hormones the side shoots need that tell them to grow. So, auxins are like a message or an order from the boss saying: "Side shoots must stay small!"

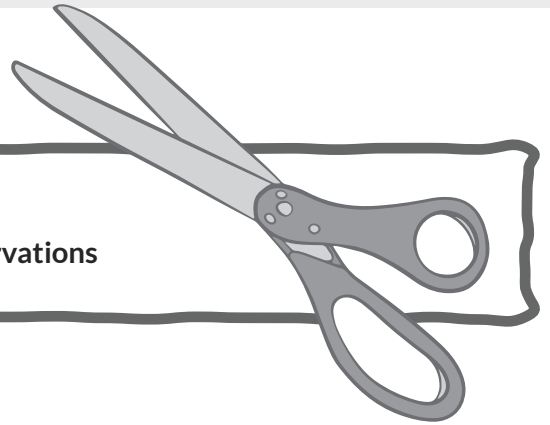
When the top of the plant is pruned (or damaged or even grazed upon by animals) the side shoots stop getting auxins and start getting other plant hormones they need to help them to grow.

Not every plant in your LGT has apical dominance. Plants like lettuce, scallions, parsley, Swiss chard and sunflower don't benefit from pruning. But LGT plants like lemon balm, peas, pole beans and some tomatoes do have apical dominance and can be pruned if desired.

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Materials needed:

- 2 Basil Seedlings
- Measuring Tape
- Scissors
- Chart to document observations



Step by step instructions:

1.

Plant two basil plants either in peat pots or in soil-less growing medium.

<https://portal.littlegreenthumbs.org/growing-great-garden/vegetable-guides/#basil>

2.

Label the plants: "Plant A" and "Plant B".

3.

Allow both plants to grow until each plant has at least 6 leaves. If growing in peat pots, this is a good time to transplant them.

4.

Prune Plant A, but do not prune Plant B. To prune, use scissors and clip just above a growing point at the top of the plant.

5.

Each week, prune Plant A, but do not prune Plant B. As Plant A produces new shoots, prune the tips of each new shoot. After a few weeks, stake Plant B if needed.

6.

Every week, observe, measure and compare the two plants and record your observations on the chart.

Discussion questions

- How do the two plants compare in size? In height? In width?
- Which plant has more leaves?
- What happens to the side shoots when Plant A is pruned?
- What happens to the side shoots in Plant B?
- Why did you have to stake Plant B?

Expand the learning:

- What are advantages to pruning Plant A? Are there any disadvantages?
- What about Plant B? What are the advantages and disadvantages to not pruning?
- Which plant has more leaves? Plant A or Plant B.
- What is the advantage to a farmer who grows basil to sell? Should she prune or not prune?

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Observation Chart:

	PLANT A: Start pruning once plant has 6 leaves Then prune every week			PLANT B: Do not prune at all		
	Height	Width	Other Observations	Height	Width	Other Observations
Week 1						
Week 2						
Week 3						
Week 4						
Week 5						
Week 6						

