



Testing the Effect of Light Wavelength on Plant Growth

Name: _____

Date: _____

Experiment #: _____



QUESTION

How does the wavelength (color) of light affect plant growth?



HYPOTHESIS

I think plants will grow best under _____
light because _____



MATERIALS

- 5 identical small plant pots or cups
- Potting soil
- 5–10 fast-growing seeds (radish or bean seeds work well)
- Grow lights or LED bulbs in different colors: Red, Blue, Green, Yellow, White
- Lamp stands or clips
- Ruler
- Watering can or spray bottle
- Label or tape and marker
- Notebook or data sheet



PROCEDURE

1. Plant the same number of seeds in each pot. Cover with the same amount of soil.
2. Label each pot with the light color it will receive: Red, Blue, Green, Yellow, White.
3. Place each pot under a grow light of the labeled color. Keep the distance between the light and the plants the same (about 15–20 cm / 6–8 inches).
4. Turn on the lights for the same amount of time each day (12–14 hours).
5. Water each pot equally. Keep all other conditions the same.
6. Measure plant height from the soil surface to the top of the tallest part of the plant every 2 days.
7. Record your data in the table.
8. Continue for 14 days.



KEEP IT FAIR!

Change only the light color. Keep water, soil, pot size, light distance, and time the same for all plants.

EXPERIMENT SETUP (Example)



Keep all lights the same distance from the plants and on for the same amount of time each day.

DATA TABLE (Plant Height in cm)

Day	Light Color				
	Red	Blue	Green	Yellow	White
0 (start)					
2					
4					
6					
8					
10					
12					
14					

Measure from soil surface to the top of the tallest part of the plant.



ANALYZE YOUR RESULTS

1. Which light color resulted in the greatest plant growth? _____
2. Which light color resulted in the least plant growth? _____
3. How do you think light wavelength affects plants? _____
4. Why do you think plants respond differently to different colors of light? _____



CONCLUSION

My conclusion is _____



TIP: You can take photos of your plants every few days to track changes!