



Name: _____

Date: _____

Experiment #: _____

OBSERVING THE EFFECT OF ELECTROMAGNETIC RADIATION ON SEEDS

Different types (and amounts) of electromagnetic radiation can affect how seeds grow.

OBJECTIVE

To observe and compare the effect of different types (and amounts) of electromagnetic radiation on seed germination and early plant growth.

HYPOTHESIS

If seeds are exposed to different types or amounts of electromagnetic radiation, then _____.

MATERIALS

- 20–30 fast-growing seeds (e.g., radish, mung bean, or cress)
- 5 small containers or petri dishes
- Paper towels or potting soil
- Water
- Ruler (mm/cm)
- Lamp with white light (visible light source)
- Smartphone (for infrared light) (use flashlight)
- UV light source (UV flashlight or blacklight)
- Aluminum foil (to block light)
- Timer or clock
- Labels and notebook

PROCEDURE

1. Prepare 5 containers with paper towel or soil. Label them: **Control (No extra light), Visible Light, Infrared Light, Ultraviolet Light, Dark (No light).**
2. Place 4–6 seeds in each container. Keep the growing medium moist but not soggy.
3. Set up the treatments:
 - **Control (No extra light):** Keep in normal room light.
 - **Visible Light:** Expose to a white lamp for 10 hours daily.
 - **Infrared Light:** Expose to smartphone flashlight (IR) for 10 hours daily.
 - **Ultraviolet Light:** Expose to UV light for 10 hours daily.
 - **Dark (No light):** Wrap container in aluminum foil.
4. Keep all containers at the same temperature.
5. Observe daily for 7–10 days. Water as needed.
6. Record your observations in the data table.

DATA TABLE (Record daily observations)

Day	Control (No extra light)	Visible Light (White Light)	Infrared Light (Smartphone Light)	Ultraviolet Light (UV Light)	Dark (No light)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

ANALYSIS

1. Which treatment had the highest germination rate?

2. Which treatment had the tallest seedlings?

3. How did the different types of electromagnetic radiation affect growth?

4. Why do you think these results occurred?

CONCLUSION

Write a summary of what you learned from this experiment.

★ **TIP:** Keep all other conditions the same for each container (water, temperature, soil, number of seeds) for a fair test.