HOMESCHOOL SCIENCE EXPERIMENT

Name: _____

Date: _____

Testing the Effect of Gravity on Plant Root Growth

Question: Does gravity affect the direction in which plant roots grow?

BACKGROUND

Roots show a response to gravity called **gravitropism**. This means roots sense gravity and grow in the direction of it—usually downward. In this experiment, you will compare root growth in a plant grown in a normal position with a plant grown on its side.

HYPOTHESIS

If gravity affects root growth, then roots in the upright plant (A) will grow downward, while roots in the plant on its side (B) will grow in a downward direction relative to gravity, not relative to the container.

PROCEDURE

1. Fill both containers with moist potting soil.
2. Plant the same number of seeds in each container at the same depth (about 1–2 cm).
3. Label the upright container as A (Control).
4. Place the second container on its side and label it B (Test).
5. Keep both containers in the same location with equal light and temperature.
6. Water both containers evenly every day.
7. Observe the root growth for 5–7 days. Record your observations.

SAFETY NOTES

- Wash your hands after handling soil.
- Clean up soil spills to avoid slips.

MATERIALS

- 2 clear plastic containers (with lids if possible)
- Potting soil
- Fast-growing seeds (such as radish, bean, or mung bean)
- Water
- Tape or labels
- Ruler
- Marker
- Paper and pencil

A
Upright (Control)

B
On Side (Test)

OBSERVATIONS

Record your observations of root direction each day. Draw what you see.

Day	A (Upright Control) Root Direction	B (On Side Test) Root Direction
1		
2		
2		
3		
4		
5		
6		
7		

CONCLUSION

What do your results show? Did gravity affect the direction of root growth?

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What did you learn from this experiment?

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