

Heredity vs. Environment: A Plant Investigation

Name: _____ Date: _____

LEARNING OBJECTIVE

Student will be able to design a simple observational investigation to consider how environment can affect the expression of inherited traits.

MATERIALS NEEDED

- 2 identical seeds or 2 cuttings from the same plant (or 2 potatoes with eyes)
- 2 small cups or pots
- soil (if using seeds)
- water
- a sunny spot and a dark/shaded spot
- paper
- pencil
- ruler

HANDS-ON ACTIVITY

1. Plant 2 seeds from the same packet (or 2 cuttings from the same parent plant) in identical cups with the same amount of soil and water — these have the same genetics.
2. Place one cup in a sunny location and the other in a dark or heavily shaded location; water both equally on the same schedule.
3. Check and measure both plants every 2-3 days for at least 1 week (or the remaining days of this activity), recording height and appearance (color, leaf health) in a data table.
4. At the end of the observation period, compare the two plants' final measurements side by side.
5. Write a short paragraph describing any differences you observed and what likely caused them.

QUESTIONS

1. **What differences (if any) did you observe between your sunny-spot plant and your shaded-spot plant?**
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2. **Since both plants came from the same genetic source, what does this tell you about the cause of any differences you saw?**
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3. Is height an inherited trait, an environmental trait, or both? Use your data to support your answer.

4. Can you think of a human trait that is also influenced by both genetics and environment? Explain.
