



Observing How Earthworms React to Vibrations in Soil

Earthworms may sense vibrations in the soil. In this experiment, you will observe how earthworms react when the soil is vibrated.



QUESTION

How do earthworms react to vibrations in the soil?



HYPOTHESIS

I think that when the soil is vibrated, the earthworms will _____



MATERIALS

- 6–10 earthworms
- Plastic container or bin with lid (at least 12 in / 30 cm long)
- Moist potting soil (no chemicals)
- Ruler
- Small vibration source (tuning fork, speaker, or phone on vibration mode)
- Timer or stopwatch
- Observation sheet (this page)
- Pencil



PROCEDURE

1. Fill the container with moist soil to a depth of about 3 inches (7–8 cm).
2. Place the earthworms on the soil surface and gently cover them with a thin layer of soil.
3. Allow the earthworms to settle for 5 minutes.
4. Choose one end of the container as the "vibration end." Place your vibration source against this end.
5. Start the timer and turn on the vibration for 30 seconds.
6. Observe the earthworms for 2 minutes.
7. Count and record how many earthworms are near the vibration end, in the middle, and near the far end.
8. Repeat Steps 5–7 two more times.
9. Record your observations in the data table below.

WHAT IS A VIBRATION?

A vibration is a quick back-and-forth movement. In soil, vibrations can travel through the ground and may be sensed by earthworms.



DATA TABLE – Number of Earthworms in Each Area

Trial	Near Vibration End (within 3 in / 7–8 cm)	Middle Area (center of container)	Near Far End (within 3 in / 7–8 cm)
Trial 1			
Trial 2			
Trial 3			

ANALYSIS – Answer the Questions

1. What pattern did you notice in the earthworms' movement? _____

2. Did most earthworms move away from the vibration? Why or why not? _____

3. What might be the reason for this behavior? _____

CONCLUSION

Write a conclusion using your evidence.

