

Observing the Social Hierarchy in Ant Colonies



Name: _____
Date: _____
Location: _____

Ant colonies are highly organized communities. Different ants have different roles, and they interact in ways that show a social hierarchy.



QUESTION

How do ants demonstrate social hierarchy within their colony?



HYPOTHESIS

I think _____

because _____



MATERIALS

- Ant farm or formicarium (with live ants)
- Magnifying glass (optional)
- Small paintbrush or tweezers
- Notebook or observation sheet (this page)
- Timer or stopwatch
- Quiet observation area



SETUP

Place the ant farm in a quiet area with minimal disturbance. Allow the ants to settle for at least 15 minutes before beginning observations.



PROCEDURE

1. Observe the colony for 10–15 minutes without touching or disturbing it. Watch how the ants interact with each other.
2. Look for different behaviors (e.g., feeding, carrying, cleaning, guarding).
3. Pay close attention to how some ants may seem to give orders or receive food from others.
4. Record your observations in the table.
5. Repeat your observations at different times of the day to see if behaviors change.

ANT ROLES (for reference)



Queen

The egg layer; largest ant in the colony. Rarely leaves the nest.



Worker

Does most of the work: finding food, caring for young, cleaning, building.



Soldier

Protects the colony; has large jaws. Usually does not gather food.

OBSERVATION TABLE

Observation Time: _____

Time (mm:ss)	Behavior Observed	Ants Involved	Who Initiated the Interaction?	Outcome (What Happened?)

REFLECTION QUESTIONS

1. What behaviors suggested that some ants have higher status than others? _____
2. Did you see any ants giving orders or being served by others? Describe. _____
3. How do these interactions help the colony survive? _____
4. If you observed at different times of day, did anything change? What? _____
5. What did you learn about social hierarchy in ant colonies? _____



SAFETY & ETHICS

Handle the ant farm gently. Do not open the nest. Keep the habitat in a safe place away from direct sunlight and extreme temperatures. Observe respectfully and do not harm the ants.