

Ant Colony Lesson Plan

Desired Results:

Students will know and understand the characteristics and behavior of ants with each other and their environment.

Assessment Evidence:

Students will keep a lab notebook. They will hypothesize the impact of varying amounts of light, water and food type. Additionally, they will record observations of the ant farms and collect the following data:

Size of ants

Quantity of ants

Description/illustration of tunnels

Ratio of tunnels/sand

Birth rate

When this activity is complete, students will hand in a formal lab report.

Agenda:

Intro to ants PowerPoint

Model lab notebook

Set up ant farms

Record observations and data (see above).

Experiment with food type (see procedure below). Students hypothesize preferred food type, write observations record data and graph results.

1. Measure out a set amount of each food type.
2. Place each food onto a piece of paper (index cards work well) labeled with the type. If using liquid foods, small containers can be used instead of, or in addition to, paper.
3. Arrange the pieces of paper inside the foraging space of your ant farm, or, if conducting a field experiment, a set distance (e.g., 25 cm) from the nest entrance.
4. Count the number of ants on each piece of paper every minute for 15 minutes (or every 5 min for 30 min if ants are slow to respond). Record your data into a table such as the one below.
5. Depending on the food type and what equipment you have access to, you may also be able to measure the amount of food collected (e.g., change in weight or volume).
6. Repeat the procedure.

Type of Food	Number of Ants				
	Time 1	Time 2	Time 3	Time 4	Time 5
Average					

Average for (food type) _____ = _____
 _____ = _____
 _____ = _____

Students will graph their data (all trials/food types on 1 graph with a legend), calculate averages for each time record overall average for each food type and write a conclusion.

The ant farm activity will continue throughout the semester. Students will periodically record observations and collect data.

Standards addressed:

National Science Standards

- Interactions of energy and matter
- Interdependence of organisms
- Population Growth
- Natural Resources
- Environmental quality
- Natural and human-induced hazards
- Matter, energy and organization in living systems

**Colorado Science Standards
Standard 2**

- Explain and illustrate with examples how living systems interact with the biotic and abiotic environment.
- Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection.
- Analyze how various organisms grow, develop, and differentiate during their lifetimes based on interplay between genetics and their environment.