

Termite Pheromones

A Carolina Essentials™ Investigation

Student Worksheet



Overview

Termites play an important role in the environment. They feed primarily on wood and other dead plant material and aid in the recycling of nutrients in ecosystems. They are also known for the damage they inflict on wood buildings. Termites form colonies whose organization and survival mechanisms are both complex and fascinating. Most termite colonies include 3 major castes:

- Reproductive termites that reproduce members and start new colonies
- Soldiers that defend against invaders
- Workers that feed the colony

All are necessary for the colony's survival.

Essential Question

What role do pheromones play in animal behavior?

Investigation Objectives

1. Investigate if termites respond to synthetic pheromones.
2. Determine if pheromones guide a termite's path.

Safety Procedures and Precautions

Wear safety goggles and gloves. Handle the animals with care and respect.

Procedure

1. Fold the piece of copy paper in half width-wise (hamburger style), making a sharp crease.
2. Unfold the paper and draw a large circle in pencil on one half of the paper. Trace over the circle several times to make the outline heavy and dark.
3. On the other half of the paper, draw a large circle using the black or blue pen. Retrace the circle several times to make the outline heavy and dark.
4. Gently place a termite in the center of the pencil circle. Observe the termite's motions for 5 to 10 minutes. Record your observations in the data table below.
5. Gently move the termite to the center of the ink circle using the paintbrush. Observe and record the termite's motions for 5 to 10 minutes.
6. Place the first termite in the empty cup using the paintbrush.
7. Repeat the same process with the second termite but begin with the ink circle. Record your observations in the data table below.
8. Place the second termite in the cup with the first one.

Disposal

When your observations are complete, place your termites in the resealable bag. Dispose of both cups and your white paper as your teacher instructs. Return the pencil, BIC® pen, and paintbrush to the designated area.

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SAFETY REQUIREMENTS



MATERIALS

2 cups with lids—1 with 2 termites and 1 that is empty
1 small, soft paintbrush
1 sheet of white copy paper
1 pencil
1 black or blue BIC® pen
Resealable bag

Data Table

Sketch the termite movements that you observe.

Trial 1	Trial 2
Pencil	Pencil
Pen	Pen

Analysis

- 1. Compare the movements of the termites in each circle.
- 2. What is the reason for the movement?
- 3. What role do pheromones play in animal behavior?