

Curricular Activity Template

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Activity Title: Termite Trails	
Grade Level (s): any	Approx. Time: 10 minutes
Subject Areas: Biology, General Science	
Standards: (Please list by number using the following abbreviations: Earth and Space Science (ESS), Life Science (LS), Physical Science (PS), Technology/Engineering (TE), Mathematics (M))	

Description of Activity (please limit to 250 words):

The goal of this experiment is to teach students how to design experiments to test hypotheses. Termites lay down chemical trails for other nest members to follow. Different species of termites follow trail cues. For instance, *Reticulitermes flavipes* follow (Z,Z,E)-3,6,8-dodecatrienol, a chemical similar to what is found in the ink of some pens. Students are given two species of termites and two chemicals, one of which can be tracked by one species of termites. The kids design and follow through on an experiment trying to figure out what variable elicits trail-following behavior in termites.

The goals of this introductory activity are to instill several scientific principles in students:

- 1) Learn how to design an experiment and form a hypothesis.
- 2) Learn the purpose of controls in an experiment.
- 3) Learn how to implement the experiment.
- 4) Learn the importance of sharing data.

Implementation (classroom organization, presentation, other implementation comments):

Divide the students into groups of 2 or 3, depending on how many termites are available. Generally, the more termites the better, as students tend to kill the animals when setting up the experiment. Give ample time (about 20 minutes) for experimentation with the termites and formulation of conclusions, and about 15 minutes for gathering the information at the end of class and coming up with class conclusions. The teacher should write down all observations and guesses given by students, correct or not.

Materials (include vendor information if appropriate):

- different colors and types of pens (ballpoint, rollerball, felt tip, etc)....Include Papermate pens in each set.
- blank white paper, Q-tips
- Reticulitermes flavipes* termites (the ones that track the ink in papermate pens)
- Zootermopsis* termites (the ones that don't track, if you wish to add another variable into the experiment)